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By- Lockette, Rutherford E.

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The major purposes of this study were to develop a process for the application of a "judgemental procedure" to program construction in vocational and practical arts education, and to apply the process in a selected local community. The "judgemental procedure" was that proposed by W.O. Stanley in 1953. After applying seven stated criteria, Bayonne, New Jersey, was selected as the local community. Phase I and II were designed to transmit information which was imperative to the development of such programs, and to develop and revise courses of study respectively. A single-group pretest-post-test design which involved three-way treatments by subjects analysis of variance was used on the 18 variables. About 50 persons participated in the study. Research limitations cited by the author overshadow the findings. The appendixes contain sample instruments and seminar presentations. (EM)

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Rutherford E. Lockette, Principal Investigator
Department of Industrial Education and Technology
Trenton State College, Trenton, New Jersey

a joint effort of Trenton State College,

New Jersey State Department of Education,

and the Bayonne School System

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Final Report

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THE APPLICATION OF THE JUDGMENTAL PROCEDURE TO VOCATIONAL AND PRACTICAL ARTS EDUCATION

Rutherford E. Lockette, Principal Investigator
Professor and Chairman
Industrial Education and Technology
Trenton State College
Trenton, New Jersey

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PROJECT STAFF

Mr. John Cummings	Resident Project Director
Mr. Michael Robinson	Research Associate
Dr. William Schill	Project Evaluation
Dr. Gary Marco	Project Evaluation
Miss Barbara Rosenquist	Project Evaluation
Dr. Ronald Koble	Project Evaluation
Dr. Thomas Phillips	District Coordinator
Mrs. Doris Clougher	Secretary (Bayonne)
Miss Francis Vinal	Secretary (Trenton)

STEERING COMMITTEE

Dr. Clifford Rall	Superintendent of Schools Bayonne, New Jersey
Dr. John Mongon	Superintendent of Schools Hudson County, New Jersey
Dr. Thomas Phillips	Principal, School No. 3 Bayonne, New Jersey
Dr. Robert Worthington	Assistant Commissioner for Vocational Education Trenton, New Jersey
Dr. Harold Starr	Director of Program Evaluation Division of Vocational Education Trenton, New Jersey
Dr. Theodore Cote	Assistant State Director Division of Vocational Education Trenton, New Jersey
Dr. Rutherford E. Lockette	Professor Trenton State College Trenton, New Jersey
Dr. Jerry Streichler	Professor Trenton State College Trenton, New Jersey
Mr. Vincent Dresser	Associate Professor Trenton State College Trenton, New Jersey

II.

SEMINAR CONSULTANTS

December 16 and 17, 1965

Dr. M. Ray Karnes, Chairman, Vocational and Technical Education, College of Education, University of Illinois

Dr. Walton Jones, Professor of Economics, North Carolina State University, Raleigh

Dr. Elizabeth Simpson, Chairman, Home Economics Education, College of Education, University of Illinois

Dr. Frank M. Cordasco, Assistant to the President, Jersey City State College

Dr. Chris Groneman, Professor of Industrial Education, Texas A. & M. University, College Station

Dr. Lynn Emerson, Consultant, Vocational Education Division, New Jersey State Department of Education

Dr. S. David Adler, Superintendent, Newton Public Schools, Newton, New Jersey

CURRICULUM CONSULTANTS

Dr. Thomas Morrisey	Metal Trades
Dr. Jerry Streichler	Graphic Arts
Dr. Ronald Koble	Introduction to Vocations
Mr. Leo Shuck	Building Trades
Miss Michalene Paulick	Office Occupations
Miss Genevieve Smith	Health Occupations
Mr. Walter Klausler	Technical Education
Dr. Myrna Crabtree	Home Economics
Mr. Robert Joy	Distributive Education
Mr. Nicholas Frigiola	Technical Education
Mr. John Smith	Industrial Arts
Mr. Morton Margules	Industrial Arts and Introductions to Vocations
Mr. George Russ	Drafting

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A. Historical Background of the Problem and Need for the Study

This study focused attention on the need for the establishment and utilization of a process through which orderly changes required to develop effective and efficient programs in vocational and practical arts education can be made. In the past, too little attention has been paid to the development of systematic procedures for keeping the school abreast of industrial developments. Ideally, these procedures should influence the general offerings of vocational and practical arts education as well as the specific content offered. The failure of educators to provide systematic procedures in curriculum development is high among the factors which have resulted in increasing the lag between vocational and practical arts education in their relationship to industry.

Attempts have been made which were designed to improve the offerings in vocational and practical arts education. Some of them are outlined below:

1. Professional organizations have encouraged the improvement of vocational and practical arts education through professional meetings, publications, and, in a few instances, seminars.
2. Supervisors of vocational and practical arts education have been employed in most states to assist in improving the offerings in these fields.
3. Colleges and universities have improved their programs in the hope that graduates of these programs would be equipped to improve the offerings at the secondary level.

The first two of these moves have been somewhat effective. However, the scope of their influence has been quite narrow, bringing about evolutionary rather than revolutionary changes. Moreover, evolutionary changes reflected through these efforts, excellent though they are, have not enabled vocational and practical arts education to bridge the gap left by revolutionary changes made in industry. (Arnstein, 1964)

The efforts of colleges and universities to improve their programs have often met with disappointing results because:

1. Secondary school programs and facilities are influenced by older teachers who hold more traditional views. Beginning teachers soon adjust to the conditions under which they work. While some progress has been made, it is negligible in the light of technological advance.
2. The problem is compounded by the fact that the purposes of vocational and practical arts education programs have been inferred from observations which teachers, administrators and guidance counselors have made. This has resulted in assigning a greater number of students with low general ability and those who present discipline problems to these courses than a more accurate interpretation of programs would suggest.

3. When improved practices are suggested in vocational and practical arts teacher education courses, quality programs which might serve as examples are few and hard to find.

The approaches which have been employed to bridge the gap between objectives and practices in vocational and practical arts education have not been adequate as indicated above. Based on this analysis, attempts to solve this problem should consider the development of procedures required to initiate and conduct model vocational and practical arts education courses which might serve as examples to pre-service and in-service vocational and practical arts education teachers, administrators, guidance personnel, and other interested and influential persons.

Certainly there has been cooperation among local school systems, State Departments of Education, and colleges and universities involved in teacher preparation in improving the quality of vocational and practical arts education. However, the degree of cooperation has not allowed the necessary interaction which leads to breaking down barriers to communication. Too often, the recommendations made by representatives of State Departments of Education are viewed as interference with local concerns. College and university teacher educators' positions are often viewed as out of contact with the realities of practical circumstances. Lastly, practices of elementary and secondary school teachers are considered by State Department of Education personnel and teacher educators as outdated.

The failure to establish and/or adhere to a process whereby efficient procedures might be employed in vocational and practical arts education curriculum development has been a contributing factor to the failure of vocational education to keep pace with the needs of the times and, therefore, to the failure of many young people to achieve success in present school programs. These young people might have met with success in properly conceived vocational and practical arts education programs.

These factors outlined above have contributed in large measure to the poor image of vocational and practical arts education and the resultant decrease in public support. A major outcome of this proposal was expected to result in improving the programs and thus the image of these fields. This should further result in increased local support for vocational and practical arts education programs. One of the major functions of this project then was to determine the extent to which the type of involvement described in this program leads to increased local support.

The concept of vocational education in the modern world is currently undergoing a great degree of expansion and upgrading. From national legislative efforts to the thrusts of local school organizations, measures are being undertaken to meet the needs of students as well as the requirements of industry. A quotation from Micheels and Sommers (1958) will illustrate some of the social forces which curriculum workers must take into account when considering improvements in vocational and practical arts education.

1. Medical science, and the general conditions under which people live, will improve steadily. This will result in a further decrease in infant mortality, and an increase in life expectancy. These conditions will:

   a. increase the world population.

   b. prolong school attendance on a full time basis for a larger number of late adolescent youth and those who plan to go to college.

   c. raise the minumum age at which youth will be able to enter gainful employment.

   d. increase the average number of years after retirement, as we now consider this concept.

2. There will be a constant increase in the complexity of business, agriculture, education, and government operations. This will create an obvious need for more, better, and varied educational offerings.

3. Technological changes in industry will proceed at an increasing pace. This trend will be especially observable in such areas as electronics, automation, the utilization of atomic power, and the application of science to more and more problems. In fifty years, it is expected that half of the total work force will be employed in occupations which are not in existence today.

4. More workers will be employed in providing services than in producing goods. Service workers may well make up 50 percent of the total work force before too long. The total number employed in agriculture will continue to decrease although the agricultural output will increase significantly. There will be a further decrease in the required number of unskilled and semi-skilled workers. On the other hand, there will be an increase in the professional, semi-professional, managerial, technical, and highly skilled pursuits which require higher levels of preparation.

5. The number of women entering regular employment will continue to increase. Presently, they constitute almost one-third of the nation's work force. "It would be hard," says the Department of Labor, "to name an occupation from which fully qualified women will be barred."

6. The typical worker of tomorrow will require much more technological knowlege related to the functional elements of science and mathematics as these apply to the various occupations.

7. More and more of our highly skilled workers of tomorrow will be functioning as supervisors of machines. This will require new and different kinds of flexibility, adaptability, and ingenuity. Such workers will be able to conceive of things for their machines to do and give them orders so that the job is performed satisfactorily.

A concept of vocational education which gives consideration to the numerous social, economic and political forces which influence it seems warranted.

B. Description of the Problem

Statement Of The Problem

The innovation to be introduced in this program was the application of the judgmental process to integrating the personnel resources of the State Department of Education, State Colleges, local teachers, local administrators, and lay leaders in a process of personal involvement by which needs for improved and expanded programs of vocational and practical arts education are examined, and new programs are developed in terms of the specific characteristics of the school community and the projected labor force needs of the state and nation. Hence, the program was focused on the process of personal involvement and the interplay of personalities as dynamic interaction takes place which begins with a vague notion of the conceptualization of a problem to provide more effectively for the vocational and occupational needs of youth, and moves through the more concrete conceptualization of the problem, the focusing of information and data on the problem, to the development and implementation of a program of action.

Problem Rationale

The social forces which interplay in modern society have placed increased responsibility upon the schools for assuring the vocational competence of youth. Rapid transition in modes of industrial design, in methods of performing tasks renders ineffectual static notions about the consistent effectiveness of vocational and practical arts education programs. The central concepts underlying the study were the need for greater cooperation between all agencies contributing to the structure of vocational and practical arts education programs and the need to determine what core of knowledge is essential to make possible flexible employability in an age of rapidly changing technology. The associated concrete values of such an outcome may also be cited: reduced job turnover and need for fast retraining programs; and greater security of the worker dependent upon a steady income for maintenance of social-emotional stability. Moreover, the extent to which a total community learns to focus upon problems and to develop procedures for solving them determines the degree to which that community is affected by the outcomes of collective action.

This study was designed to incorporate these notions in utilizing a specific procedure to develop improved vocational and practical arts education programs. A review of literature in these areas indicates no previous endeavor of this type, although there is evidence of research related in method to the present design with respect to other disciplines. Whipple (1933) reports the efforts of a committee with a common professional aim. Statements presented were often evaluated by members holding widely differing opinions or viewpoints. Total agreement was not always reached but concensus was obtained eventually by the committee writing about the course of action to be followed. This concensus by professionally concerned people proved a foundation for the assembling of a yearbook that would potentially exert a powerful influence upon trends in the teaching of geography.

An example of a classification process by individual and group judgment was employed by Krathwohl, Bloom and Masia (1956). The procedure began with exploration as a means of ordering a list of cognitive objectives along a continuum. Resulting from experimental arrangements of objectives by the group of authors, a principle of complexity was developed as a scheme for ordering them within the cognitive domain. Clarifying definitions of the different classes within the cognitive domain became the charge of a subcommittee. The product of this committee was a set of definitions, educational objectives and test problems which were submitted to the larger group to test by matching the objectives and problems with the definitions. Inadequate definitions, discovered while employing this classifying process by the major group, were revised repeatedly based on the judgment of sub-groups until the definitions and classifications were "communicable."

The Commission on Mathematics (1959) of the College Examination Board was created as a result of expressed concerns of the Examiners in Mathematics. They requested a study of the secondary school mathematics curricula. At the same time, a Committee on Examinations recognized the need for exploration related to this program, founded upon guidelines produced by the Commission. The groups translated proposals into courses of study, textbooks, teachers' guides and reference material to bring about the curriculum change.

The judgment procedure for content selection as proposed by Stanley (1953) and also by Smith, Stanley and Shores (1962) seems most appropriate in dealing with the problem to which this study directed its attention.

According to Smith, Stanley and Shores (1962) the judgmental procedure is most conveniently described in broad outlines. If the curriculum worker has a broad social perspective and his ideals are permeated by democratic beliefs and devoid of identification with the interests of special social groups such as industrial managers, business organizations or academic groups and he is not preoccupied with the past so that he can appreciate the present and see its potentialities for the future, his judgment will lead to the valid selection of subject matter. For

> "the most "objective" selection of content by this procedure requires that his interests, knowledge and ideals transcend special social groups and embrace the common good. In short, this procedure--perhaps more than any other method of content selection--demands broad social vision and freedom from the restricting influences of narrow social outlooks and partisan rationalizations.
>
> In directing attention to this procedure, the curriculum workers must raise and answer the following questions:
>
> 1) What social and educational objectives should be accepted?
> 2) What is the existing state of affairs in which these objectives are considered desirable and appropriate, and in which they must be realized?
> 3) What subject matter best satisfies these objectives under the existing conditions?"

Evans (1962) discussed the procedures for the selection of content for industrial arts geared to general education. He advanced a procedure for the selection of industrial arts general education content which closely parallels the judgmental procedure. Evans held that the determination of industrial arts content resides in pooling knowledge of the industrial arts teacher, the university professor of industrial arts, the educational psychologist, the researcher, but most important of all, the industrial sociologist, the economist, the general industrial specialist---people who are concerned with the basic structure and principles of industry. These latter furnish the real scope of content.

Recent developments indicate that the total field of vocational education is now looking to persons in these same fields for information which will lead to improved content selection. A recent Advanced Research Seminar in Vocational Education (February 9-14, 1964) featured economists, sociologists, vocational guidance experts, researchers, as well as experts from the various areas of vocational education. Annual Research Seminars in Vocational-Technical Education since that time have employed experts from these and other fields. This is evidence of the growing concern of educators for reducing theory to practice and in determing ways to provide realistically for the needs of youth.

The procedure outlined above had not been tried in a manner which lent itself to evaluation. Nor had it been tried in a manner where the necessary communication had taken place to allow for interaction to the degree which was required.

An attempt has been made here to develop the necessary details to allow this procedure an opportunity to operate. A method of evaluating the effectiveness of the process which has been employed should give a clearer understanding of the process as well as means for improving it.

Summary Statement of the Problem

In essence, this study proposed an experimental procedure for exploiting the judgmental procedure in a specific application to vocational and practical arts education. Evaluation was built in as a system of continuous corrective action as procedures were developed and used.

C. Objectives

The major purpose of this study was to develop a process for the application of the judgmental procedure in the construction of broadly conceived programs of vocational and practical arts education, and to apply the process to a practical situation in a selected local community. This necessarily involved:

1. The consideration in the development of this process of a modified judgmental procedure for program and curriculum development which encompassed cooperation of personnel at all levels of the local school district, the local community, the teacher education institutions, the State Department of Education, the industrial community, and needed consultants from within the fields of vocational and practical arts education as well as from fields related thereto. More specific objectives were to determine how to:

    a. Meaningfully involve an entire school system in action designed to improve vocational and practical arts education.

    b. Stimulate influential local groups into action pertinent to the development of vocational and practical arts education.

    c. Organize functional advisory and policy making committees for the development and maintenance of quality vocational and practical arts education programs.

    d. More fully utilize personnel of the State Department of Education in action designed to improve secondary school programs.

    e. More fully utilize teacher education personnel in action designed to improve secondary school programs.

    f. Involve related disciplines in the development of improved vocational and practical arts education programs.

    g. Provide vocational and pre-vocational education which more clearly meets the needs of the persons who need it.

    h. Systematically improve courses of study to engender changes in student behavior which are consistent with stated objectives.

    i. Develop new courses of study which will actually be employed by laboratory and classroom teachers.

    j. Improve teacher education programs through interaction with the public schools and the State Department of Education personnel.

   k. Improve supervision and other activities of the State Department of Education through interaction with the public school and the state college personnel.

   l. Development of a higher degree of coordination and cooperation among personnel of the Bayonne School System, the State Department of Education, and Trenton State College in matters related to curriculum development, implementation and evaluation.

   m. Development of greater understanding of the application of the judgmental procedure of curriculum development in programs related to occupational preparation.

2. Operationally upgrading and extending vocational education and practical arts programs with the use of the cooperative procedures noted above. More specifically this involved:

   a. Evaluation, revision, and extension of pre-vocational offerings in the light of needs of all persons living in a typical highly industrialized and dynamic society.

   b. Evaluation, revision, and extension of the vocational education offerings for occupational orientation and occupational placement.

   c. Gearing of certain programs to affect the student who had not become academically oriented and who had not met with success in occupationally oriented programs with a view of providing such students with successful learning experiences.

3. Development of specific courses at Trenton State College to meet the needs of in-service vocational and practical arts education teachers.

4. Increase of local support for vocational and practical arts education through school and community involvement.

D. Administration

Description of Cooperating Community

Hudson County, New Jersey is an urban, industrialized county. It is the smallest county in New Jersey in terms of geographical area. Yet, it is the most densely populated county in New Jersey. "It has 13,600 residents per square mile. In comparison, Essex, the second most densely populated county in New Jersey, has 7,250 residents per square mile." (State of New Jersey, 1962)

Bayonne, New Jersey is located in Hudson County and has a population of 78,000. It too is highly industrialized and presents most of the problems which are typical of cities of this type. Although the educational system boasted of an excellent vocational program during the 1930's, it lags considerably behind the state at large at the present time. (State of New Jersey, 1962)

Two recent developments in this area are noteworthy. In September, 1963, a new County Superintendent of Schools was appointed. In September, 1964, a new Bayonne Superintendent of Schools assumed duties. These events give evidence that positive moves are in the offing, particularly in light of the expressed ambitious goals of these individuals for the school systems with which they are associated.

Criteria For Site Selection

Bayonne, New Jersey was selected as the site for this study because it fulfilled the following criteria:

1. Factors common to numerous American communities and to virtually every type of social condition in terms of needs in the area and vocational education are found in Bayonne.

2. The total population of Bayonne was 78,000 based on the 1960 census. This city provides a concentration of population which will make for the success of the proposed program.

3. Bayonne has one high school.

4. The relationship existing among the school personnel, County Superintendent, District Superintendents, Director of Vocational Education, teachers of Practical Arts, vocational and technical subjects, as well as related fields, should provide a healthy atmosphere for the kind of interaction which is essential to a process of this type.

5. School personnel in the community should be concerned about vocational needs of their youth and adults. Accordingly, they should be interested in curriculum development geared to the end to which this process is directed.

6. Administrative personnel should possess the competencies necessary for efficient management of the process and teaching personnel should possess the basic competencies for its execution.

7. Vocational education will be introduced and/or upgraded in a community where, because of its size, character, and unfavorable economic status, such offerings would otherwise be delayed, or never begun.

Women are vital in the area's work force. They fill 29 percent of all jobs and 39 percent of the semi-skilled jobs in manufacturing establishments. The Bayonne High School is preparing women only in stereotyped occupations such as beauty culture, practical nursing, cooking and sewing. Inasmuch as women supply such a sizeable portion of the work force, it seems desirable to consider their preparation in light of opportunities for employment. (State of New Jersey, 1962)

The need for clerical workers was estimated at 3,195 by 1963 and 8,297 by 1966 in the labor market district of which Bayonne is a part. The provisions made for training in this area are far less than necessary to meet the demand both quantitatively and qualitatively. Similarly it was projected that the area would need 3,300 skilled workers by 1963 and 7,200 by 1966. The number of semi-skilled workers will make the greatest expansion. It was projected that by 1966, 9,484 semi-skilled workers would be needed. In 1962, one in five workers was unskilled. This type of work will increase less rapidly than work in other occupational categories and accordingly will be a small proportion of the total labor force. Accordingly, the Bayonne schools will have to prepare individuals previously employed in this category for occupations of a more highly skilled level. (State of New Jersey, 1962)

In Bayonne, the site of this study, there are approximately 3,000 high school students. An estimated 1,800 students are in public elementary schools (K-8) and a comparable number are in parochial elementary schools (K-8). The parochial high school is able to accomodate a very small percentage of their elementary students. Therefore, the larger proportion of parochial school children who go to the public high school have had no exploratory experiences in vocational fields. Pre-vocational experiences in the public elementary schools (K-8) consist primarily of woodwork for boys and cooking and sewing for girls. Accordingly, pre-vocational experiences below the ninth grade level are extremely poor throughout Bayonne.

The program of vocational and practical arts education with few exceptions, has not evidenced consideration for factors in present day society with which it should have been concerned. Little evidence can be shown that the economic, sociological, occupational, and technological factors which influence vocational education in today's dynamic society have been considered seriously. There are instances of atomistic preparation now considered ill-advised in light of the comprehensive needs of industry. Hence, there appeared to be a need for orienting programs of vocational education in the light of these realities.

Administration

The overall administration of the study was under the leadership of the Project Director, a faculty member at Trenton State College, He, as Principal Investigator, provided leadership in the total research effort and cooperated with the Steering Committee which served as the chief advisory group for the study. The Steering

Committee consisted of representatives of the County Superintendent of Schools' Office, the local Board of Education, the State Department of Education and Trenton State College. This group was charged with the responsibility of decision-making on all matters pertaining to the project. There was a real need for full and free discussion by the members of the Steering Committee on matters related to the development of practical arts and vocational education. Through interaction of the members of this group, barriers to communication were expected to disappear and improved decision-making was the expected result. Accordingly, this group was required to meet frequently.

Teachers were to be involved in the project at an early stage. Representatives of this group were also to be involved as advisors to the Steering Committee and their recommendations were expected to contribute in a central way to the decision-making process. Their participation was viewed as essential to the success of the program.

At an early meeting of the Steering Committee, an over-all Advisory Committee was to be selected. This committee was to be representative of the community at large. It should have been helpful to the Steering Committee, by making observations and recommendations of general concern related to broadly conceived programs of vocational education. Like other members of the community, teachers were to be among those selected to serve on the Committee of One Hundred.

It was suggested that the Advisory Committee, later referred to as the Committee of One Hundred, be composed of individuals who were representative of:

1. each of the content areas of vocational and practical arts education;
2. key industries in the area;
3. the Parent-Teacher Association;
4. the Board of Education;
5. the state employment service;
6. the local city government; and
7. the Steering Committee.

The Committee of One Hundred should have embraced all organized forces within the community. It was to be an early task of the Steering Committee to identify individuals to be seated on the committee. Care was to be taken to solicit the participation of individuals who can contribute to the community-wide success of the project.

After specific program needs were identified in Phase I, Technical Advisory Committees were to be established in each of the content areas identified. A Technical Advisory Committee was also to be established for guidance personnel. These committees were to serve to assist in matters peculiar to specific content areas.

The investigator was to assume the responsibility of defining functions of staff and determination of procedures for gathering and treating data consistent with the objectives and hypotheses of the study. Care was to be taken to assure that major provisions were adhered to, within which quality education geared to the world of work could evolve.

E. Procedures

The procedures employed in this project were designed to implement the judgmental process and group interaction and involvement to the improvement, expansion, and development of programs in the selected demonstration school system.

General Design

The general design of this project called for a massive treatment to be applied to a school system--under the direction of a project director, with assistance of the Steering Committee, a broadly conceived and appointed Committee of One Hundred representing the structure of the community, and Technical Advisory Committees, and embodied the following components:

1. An initial survey of the resources and potential of the community, and an inventory of the school facilities and curriculum. (This component was to be completed prior to the formal start of the project.)
2. A seminar was held shortly after the project received final approval which involved school personnel and members of the Committee of One Hundred, which included the Steering Committee. The purpose was to study, analyze, and informally react to, in small discussion groups, the preliminary report, and to identify areas needing additional study and attention. The seminar was conducted by the project director and the resident director with the assistance of consultants from related fields.
3. The employment and assignment of a full time resident director, who was to be broadly trained and experienced in the theory and application of group dynamics, and with a competent understanding of vocational and practical arts education, occupational needs and the structure of the labor force, who was held responsible for giving leadership to the entire process of group interaction, studies, information, and involvement of school and community personnel in defined improvement program.
4. The employment and assignment of a Trenton State College faculty member to direct the research and evaluation phase of the program and to conduct a year-long workshop at the designated school involving the personnel interested in and related to the vocational and practical arts programs including vocational guidance. Such a workshop was to give attention to:
    a. Identifying needs for additional vocational education programs.
    b. Improving existing vocational and practical arts programs.
    c. Developing more adequate curriculum materials.

5. The concentration of Trenton State College, State Department of Education personnel, persons representing business and industry, and teachers and professors of vocational education in specialized areas examining critically the emerging technological developments and job requirements in job families, such as the following:

    a. metal trades,

    b. woodworking,

    c. electricity,

    d. radio and electronics, and

    e. food service occupations.

6. The development of an operational procedure by which the vocational guidance and vocational education function may be integrated more fully and realistically.

7. The determination of financial resources needed to implement a more realistic program of vocational and practical arts education, with special attention to manpower needs, and to equipment and facilities, in collaboration with representatives of business and industry, city administration, school board members, and school administration.

Phase I of this study was designed to bring to the attention of the Bayonne, New Jersey school system, of Trenton State College and the State Department of Education personnel, the social, economic, technical, occupational and other factors imperative to the development of vocational and practical arts education with which they were more than likely unaware.

No attempt was made to finalize the specific programs to be offered prior to the program design seminar. The position taken was that for needed changes to be implemented at the grass roots level, changes would have to be internalized by persons who work at the grass roots level. Experts who served as consultants called attention to the implications of their disciplines for vocational and practical arts education. Among the areas from which consultants were sought were: economics, sociology, social psychology, occupations, guidance, and the various content fields of vocational and practical arts education.

Through the process of interaction during the seminar, as well as in Steering Committee meetings, meetings of the Committee of One Hundred, Technical Advisory Committee meetings, and through personal contacts of members of these groups, the following outcomes were expected:

1. Each participant should have become aware of his own strengths and weaknesses.

2. Each participant should have become aware of the strengths and weaknesses of other participants.

3. Each participant should have reached a state of readiness for sincere cooperation.

4. Each participant should have reached a state of readiness for change.

After the seminar, through the leadership of the Steering Committee, which assumed the overall leadership of the study, and with the close cooperation of the Committee of One Hundred, which represented the institutions, agencies, and groups of importance to the development of vocational and practical arts education, specific programs were to be identified to meet the vocational and practical arts education needs of the community.

Phase II of this study was designed to develop and revise courses of study for areas of vocational and practical arts education agreed upon in Phase I. In the case of educational and vocational guidance services, specific details were to be worked out with respect to extent and types of services to be offered. In addition, current facilities and equipment were to be evaluated to determine adequacy to fulfill the demands of new and revised programs.

A vocational education curriculum expert was to conduct a two-day curriculum development institute designed to establish guidelines as well as a frame of reference for course of study development in vocational and practical arts education. This was to be followed by a curriculum development workshop where detailed courses of study were developed for each course to be offered. Recognized experts were secured as consultants for each content area. Where at all possible, consultants were drawn from programs which provided an example in their specific field. Consultants were to be used near the beginning of the workshop to lend direction to course development. They were to be used again near the end of the workshop to evaluate, reorient, and assist in finalizing the courses of study.

This phase of the study relied heavily on new ideas introduced by consultants, Trenton State College faculty members, State Department of Education personnel, Bayonne faculty members, professional staff members, and others associated with the project. Innovations to be included in specific courses could not be known at the outset of this procedure. This would depend in large measure on the interaction among individuals working on specific courses. Concepts which vocational and practical arts educators have found of value through research efforts and those which hold promise in theory were to be advanced. A few concepts which could be expected to be adopted are presented to indicate some of the concerns of the investigators to which this study directed attention.

1. Occupational Clusters

Little attention has been paid to the development of courses which are based on a common core of skills. Such courses would develop individuals for any of a number of occupations by identifying and presenting content which is common to them all. These related occupations are widely known as occupational families. The increasing difficulty in predicting the demand for specific occupations in advance of training makes the dealing with basic skills and knowledge which has greater transfer value of importance to initial and future job placement.

2. Pre-Vocational Experience

Although practical arts education has had as an objective the providing of pre-vocational experiences designed to help youth more intelligently select their future occupations, course activities and experiences have had little similarity to the world of work. Courses for boys have dealt in the main with a few of the basic skills and a minimum of related technical information. In most courses, a number of projects have been made which are thought to have boy interest and in instances, parent appeal. Practical arts courses for girls have remained primarily cooking and sewing through the years. Recently, typing and other business courses have been added in very limited numbers. This continues to be true despite the fact that 30 percent of the people employed in manufacturing in the United States are women.

3. Service Occupations

There are a number of occupations in the service field to which vocational and practical arts education has not devoted attention; home cleaning, child care, lawn care, custodial service, and food service are a few of them. These areas offer a realistic and financially rewarding opportunity to a large number of properly trained individuals. Vocational education programs which will serve the needs of persons desiring employment in the foregoing types of service are of practical value and promote the general welfare.

4. Relating Vocational and Practical Arts Education to Academic Courses

A parallel structure of vocationally related academic subjects has existed in numerous instances in the past. A student thus would enroll in courses in his vocational area and, in addition, a sequence of courses in English, Social Studies, mathematics, and other subjects which had limited relationship to his vocational area. Furthermore, in view of the greater mass mobility and occupational changes, often these courses had minimum transfer value with respect to the job changes.

Inherent in vocational education is a high degree of motivation that utilized properly may promote effective instruction. Rather than using parallel courses, instruction in English, Social Studies and mathematics can make use of the built-in incentives characterizing these courses. Incorporating this process, students would be provided English language experiences common to the occupation, some of them highly technical. A student receiving this type of instruction will be well versed in broad areas related to his vocation. Instruction should have breadth to facilitate job mobility in a rapidly changing society.

Methods and Materials

The project director was to conduct a workshop for the teachers in the school district during the 1965-66 school year, for one night per week for the entire year.

The first part of the workshop was to be a study of occupational needs of the community. Consultants were to be used to assist in the development of the program.

The second part of the workshop was to be focused on the development of new curriculum materials based on the needs of the community and projected labor requirements. These materials were to be mimeographed during the summer of 1966, and utilized in revised, new, and expanded course offerings during the 1966-1967 school year.

The workshop experiences, the resulting process and materials, and the recommendations of consultants were to be utilized by the project director in the development of a training program designed to upgrade teachers of vocational and practical arts education. The development of this program was to be defined as a separate proposal for the summer of 1966.

By this procedure, it was anticipated that the experience gained during the first part of the project would be utilized in in-service educational programs for teachers in the industrial cities along the east coast where there is a need to up-date programs of vocational and practical arts education

Evaluation of Program Changes

Evaluation of program changes was to be made by examining the following data and trends:

1. Increases in local school funds budgeted for vocational education in Fiscal Year 1967 as compared with Fiscal Year 1966, expressed as a percentage of the total assessed evaluation of the school district.

2. Increases in capital expenditure for facilities and equipment for vocational and practical arts education in Fiscal Year 1967 over Fiscal Year 1966.

3. Increases of the total number of hours of instruction in vocational and practical arts education offered in 1966-67 school year over the 1965-66 school year expressed as a ratio of total number of hours of instruction scheduled per week to the total high school enrollment.

4. Increase in the number of different students enrolled in vocational and practical arts education programs in 1966-67 school year as compared with the number enrolled in 1965-66 expressed as a percentage of the total high school enrollment.

5. Decrease in the number of students dropping out of school in 1966-67 as compared with 1965-66, expressed as a percentage of the high school enrollment enrolled at the beginning of the school year.

Evaluation of Modifications of Participant Behavior

1. Changes in scores on an attitude scale to be developed designed to measure student attitude toward vocational education.

2. Changes in concept orientation regarding vocational and practical arts education on the part of the members of the Committee of One Hundred. An instrument such as the semantic differential was to be used. Scores were obtained on concepts for the 100 people and the results factor analyzed. It was hypothesized that when the intercorrelation matrix based on individuals is factor analyzed, the factor structure will reflect changes toward agreement on concepts, as represented by a smaller number of factors accounting for the proportion of variance observed.

3. The critical incident technique was used throughout the first year with faculty members of the Bayonne school system and with members of the Committee of One Hundred to identify problem areas of behavior which merit attention in further program planning.

4. Curriculum consultants were employed to assist in evaluating the curriculum and course material developed in the workshop.

Time Schedule

June 1, 1965 - September 1, 1965	Collection and assembly of data by project director. Employment of staff.
September 1, 1965 - October 1, 1965	(1) Conduct preliminary seminar. (2) Organize Steering Committee. (3) Organize Advisory Committee. (4) Take preliminary measures. (5) Start workshop.
October 1, 1965 - May 31, 1966	(1) Conduct workshop. (2) Involve community and school in program.
May 1, 1966 - May 31, 1966	Take measures at end of first year.
June 15, 1966 - August 15, 1966	Conduct training program at Trenton State College, to be submitted as a separate proposal.
September 1, 1966 - May 31, 1967	(1) Continue involvement process. (2) Teach new courses. (3) Conduct in-service education program as part of training program.
May 1, 1967 - May 31, 1967	(1) Provide consultation service to other interested communities. (2) Take measures at end of year.
July 1, 1967 - July 7, 1967	Hold workshop for demonstration of involvement and dissemination of program.
July 1, 1967 - August 31, 1967	Analyze data and submit final report.

F. Dissemination

Dissemination of the results of this proposal was planned to be accomplished in the following manner:

1. Through the medium of a training program slated for development at Trenton State College, the results will be demonstrated to the enrolled students.

2. The Resident Director's schedule called for one-half time during the second year, when the new program is under way at Bayonne. As the program planned for that period was implemented it would be his responsibility to visit other communities, describe the results of the first year's work, and inform school and community persons about the project. In addition, he would be available to discuss the program with visitors to Bayonne.

3. A workshop was scheduled to be held at Bayonne in July, 1967, for the purpose of presenting the program in detail to interested school and community leaders, teachers, and administrators.

4. The plan was to prepare articles and reports for the news media and for professional journals.

MODIFICATION OF THE ATTITUDES OF PROJECT PARTICIPANTS

The Bayonne project affected participants in the project in a number of ways. Aspects of the project which might have influenced the participants include: visits to other vocational programs, curriculum consultants, interest by state and local groups, technical advisory committees, and a curriculum conference. One domain in which behavior may have been altered by the project is the affective domain, or that area of behavior concerned with feelings, attitudes, and values. The basic question under consideration was to determine the influence of the project on attitudes toward vocational education, practical arts, and college preparatory curricula with regard to five curriculum dimensions.

Design and Procedures

Design

The basic design for assessing the influence of the project on the attitudes of project participants was a single-group pretest-posttest design. No control group was available.

Three factors were isolated in the design: (a) Test--pretests and posttests; (b) curricula--vocational education, practical arts, and college preparatory; and (c) curriculum dimensions--continuing social growth, time and money expenditures, occupationally oriented curriculum, clear and specific purpose, and relating theory to practice. Thus the model employed for analyzing the attitude scores was a three-way treatments-by-subjects analysis of variance. Since each subject took both a pretest and a posttest, the statistical model had to allow for scores that were correlated. The treatments-by-subjects design does this.

The dependent variables for the analysis were 15 pretest and 15 posttest attitude scores, one score for a particular curriculum dimension, curriculum, and test.

Instrument

Description: The instrument used to measure attitudes was a variation of the AB scales developed by Fishbein (Fishbein, 1962; Fishbein and Raven, 1963). These scales were based on Osgood's semantic differential, which utilizes bipolar adjective scales to determine differences among concepts. Fishbein attempted to isolate scales which differentiated between the probability dimension and the evaluative dimension of a concept. The former, having to do with whether or not a phenomenon exists, he called "belief"; and the latter, dealing with whether or not the phenomenon is good or bad, he called "attitude". Scales related to belief include impossible-possible, false-true, and probably-improbable. Scales related to attitude include harmful-beneficial, wise-foolish, and bad-good.

According to Fishbein's theory, which if related to the notion of cognitive dissonance, an individual's attitude toward a particular object or concept is a function of his belief about the object (B); that is, his assessment of the probability that the object is related to other objects, and his attitude toward the "other" objects (A). Operationally, what the theory means is that significant dimensions associated with a particular object are identified, the probability of a particular relation between the object and the dimensions is determined, and the dimensions are evaluated. The attitude toward the object, then, is the sum of the belief by attitude interactions (BxA). The critical element in this process is identifying the significant dimensions, if the dimensions are not particularly related to the object, then the attitude assessment will be incomplete.

In this study the attitude objects were vocational, practical arts, and college preparatory education. The significant dimensions were identified as continuing social growth (CSG), time and money expenditures (TME), occupationally oriented curriculum (OOC), clear and specific purpose (CSP), and relating theory to practice (RTP). The object-dimension relations were the following:

(curriculum) contributes to CSG
(curriculum) justifies TME
(curriculum) is an example of OOC
(curriculum) has a CSP
(curriculum) is capable of RTP

The probability of the object-dimension relations was assessed by use of the scales possible-impossible, unlikely-likely, existent-non-existent, unsuccessful-successful, and true-false. The dimensions were evaluated by use of the scales harmful-beneficial, bad-good, wise-foolish, new-old, and unimportant-important. (See Appendix A for entire instrument)

Since each bipolar adjective scale was a graduated scale of seven steps, the scores from one to seven were assigned in each case. The score for an attitude toward a significant dimension could range from 7 to 35 (total of five scales). The score for a belief about a curriculum had the same range. Since negative aspects of beliefs and attitudes had to be considered, and since negative scores were undesirable, belief by attitude interactions were scaled by subtracting 20 (AB) to preserve the negative aspects and then adding 700. Thus AxB interactions could range from 75 to 525 with the neutral point being 300.

Reliability. Fishbein and Raven (1962) reported a test-retest reliability of .90 for attitude scores and .908 for belief scores for 43 subjects and scales that were similar to the ones used in this study. The objects of their scales, however, were not the same as the ones used here.

One evidence of reliability from the present study is the correlation between pretest and posttest scores for attitudes and beliefs (N = 21). Of course, it must be borne in mind that treatment effects lower this "test-retest" reliability. Pretest-posttest correlations are given in Table 2.1.

TABLE 2.1

Pretest-Posttest Correlations of Attitudes Toward Curriculum Dimensions (A) and Beliefs about Curriculum-Dimension Relations (B).

Attitude or Belief	Correlation
Attitude:	
Continuing Social Growth (CSG)	-.04
Time and Money Expenditures (TME)	-.01
Occupationally Oriented Curriculum (OOC)	.25
Clear and Specific Purpose (CSP)	.04
Relating Theory to Practice (RTP)	.14
TOTAL	-.02
Belief:	
Vocational Education Contributes to CSG	.17
Vocational Education Justifies TME	.40
Vocational Education is an Example of OOC	.14
Vocational Education has a CSP	.33
Vocational Education is Capable of RTP	.59
TOTAL	.48
Practical Arts Education Contributes to CSG	.31
Practical Arts Education Justifies TME	.60
Practical Arts Education is an Example of OOC	-.01
Practical Arts Education has a CSP	.00
Practical Arts Education is Capable of RTP	.51
TOTAL	.40
College Preparatory Education Contributes to CSG	.62
College Preparatory Education Justifies TME	.66
College Preparatory Education is an Example of OOC	.17
College Preparatory Education has a CSP	.45
College Preparatory Education is Capable of RTP	.40
TOTAL	.55

According to these data, the attitudes toward curriculum dimensions are not very reliable. However, the reliabilities of the beliefs are high enough to allow comparisons among groups as opposed to individuals.

Validity. Fishbein and Raven (1962) report one attempt to assess the AB scales. They tried to alter an attitude toward ESP by differential communications stressing positive and negative aspects of ESP. The results indicated that attitudes as measured by the A scales changed in the direction that corresponded to the type of communication and beliefs as measured by the B scale.

In another study more closely related to the technique employed in this study, Fishbein determined the relations between two measures of the concept "Negro." One measure was a set of five A scales. The other measure was AB interactions. Ten significant dimensions of Negroes were identified and attitudes toward these dimensions were assessed by use of A scales. Then beliefs concerning Negroes and the signficant dimensions were assessed by use of B scales. A Spearman rank order correlation of .80 was obtained between the two measures.

Evidence of validity in the present study was determined in a manner similar to that used by Fishbein. Since five significant dimensions of curricula were identified, and since beliefs about the curriculum-dimension relation were assessed, AB interactions could be determined. As a part of the posttest procedure, subjects were asked to rate the concepts vocational education, practical arts education, and college preparatory education on the A scales. These two measures were then correlated. The results are shown in Table 2.2.

Table 2.2

Correlations of General Attitude Toward Curricula (GA) with the Interaction Between Attitude Toward Curriculum Dimension (A) and Belief About Curriculum-Dimension Relation (B). (N = 21)

A x B Interaction	General Attitude		
	Vocational Education	Practical Arts	College Preparatory
Vocational Education:			
Continuing Social Growth	.66**	.18	.48*
Time and Money Expenditures	.52**	.26	.36
Occupationally Oriented Curriculum	.50*	.24	.45*
Clear and Specific Purposes	.55**	.23	.44*
Relating Theory to Practice	.44*	.14	.24
TOTAL	.62**	.24	.46
Practical Arts:			
Continuing Social Growth	.53**	.52**	.53**
Time and Money Expenditures	.37	.70**	.39**
Occupationally Oriented Curriculum	.36	.55**	.60**
Clear and Specific Purposes	.35	.34	.46*
Relating Theory to Practice	.04	.36	.18
TOTAL	.41*	.62**	.55**
College Preparatory:			
Continuing Social Growth	.62**	.32	.55**
Time and Money Expenditures	.49*	.52**	.50*
Occupationally Oriented Curriculum	.18	.28	.15
Clear and Specific Purposes	.28	.25	.21
Relating Theory to Practice	.21	.35	.32
TOTAL	.46*	.45*	.45*

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*Significant at or Beyond the .05 Level (one-tailed).
**Significant at or Beyond the .01 Level (one-tailed).

It can be seen that the correlations of the total interactions for a particular curriculum and the general attitude toward the curriculum, as measured by the A scales were .62, .62, and .45 for vocational education, practical arts education, and college preparatory education respectively.

From the correlations of the AB interactions for curriculum dimensions with the general attitude, it is possible to determine whether or not a particular dimension was an important component of the general attitude. It appears that all five dimensions are important components of general attitude. It appears that all five dimensions are important components of general attitude toward vocational education. However, only continuing social growth, time and money expenditures, and occupationally oriented curriculum are closely associated with general attitude toward practical arts education; and only the first two are important to attitude toward college preparatory education. It appears that only two significant dimensions across all curricula were identified.

Collection of Data. The pretest was administered during the initial seminar held on December 16, 1965. The test was assembled with appropriate directions and an "Information Sheet for Project Participants" (See Appendix B). Sufficient time was allocated to allow all respondents to complete the semantic differential.

On June 2, 1966, the posttest was administered to those individuals that had assembled for the second seminar which was the final conference of the first phase of the project.

Results

Pretest-Posttest Changes

The analysis of variance of pretest and posttest attitudes is given in Table 3.1.

Table 3.1

Analysis of Variance of Pretest and Posttest Attitudes

Source	Sum of Squares	Degrees of Freedom	Mean Square	F
Between Persons	736,227,108	20		
Within Persons	2,742,163.933	609		
Between Tests (T)	3,467.435	1	3,467.435	< 1
Between Curricula (C)	338,135.108	2	169,067.554	45.28**
Between Dimensions (D)	155,505.406	4	38,876.352	10.41**
T x C	2,569.089	2	1,284.544	< 1
T x D	17,649.786	4	4,412.446	1.18
C x D	152,029.004	8	19,003.626	5.09**
T x C x D	7,382.021	8	922.753	< 1
Error (w)	2,165,426.084	580	3,733.493	
TOTAL	3,478,391.041	629		

* Significant at or Beyond the .05 Level
** Significant at or Beyond the .01 Level

Means corresponding to the test by curriculum, test by dimension, curriculum by dimension, and test by dimension by curriculum interactions are reported in Tables 3.2--3.5.

Table 3.2

Analysis of Variance of Pretest and Posttest Attitudes

Means of Tests for Each Curricula and Average Means

Curriculum	Test		
	Pretest	Posttest	Average
Vocational Education	418	417	417
Practical Arts	358	367	362
College Preparatory	374	380	377
AVERAGE	383	388	386

Table 3.3

Dimension	Test		
	Pretest	Posttest	Average
Continuing Social Growth	398	397	398
Time and Money Expenditure	399	386	393
Occupationally Oriented Curriculum	347	362	354
Clear and Specific Purposes	385	399	392
Relating Theory to Practice	387	396	391
AVERAGE	383	388	386

Table 3.4

Analysis of Variance of Pretest and Posttest Attitudes

Means of Curricula for Each Dimension and Average Means

Dimension	Curriculum			
	Vocational Education	Practical Arts	College Preparatory	Average
Continuing Social Growth	408	375	410	398
Time and Money Expenditure	414	369	396	393
Occupationally Oriented Curriculum	416	330	317	354
Clear and Specific Purposes	412	367	396	392
Relating Theory to Practice	436	372	366	391
AVERAGE	417	362	377	386

Table 3.5

Analysis of Variance of Pretest and Posttest Attitudes

Means of Tests for Each Dimension and for Each Curricula

and Average Means

Curriculum and Dimension	Test Pretest	Posttest	Average
Vocational Education:			
Continuing Social Growth	412	404	408
Time and Money Expenditure	424	404	414
Occupationally Oriented Curriculum	415	417	416
Clear and Specific Purposes	408	416	412
Relating Theory to Practice	429	443	436
AVERAGE	418	417	417
Practical Arts:			
Continuing Social Growth	371	378	375
Time and Money Expenditure	375	363	369
Occupationally Oriented Curriculum	320	340	330
Clear and Specific Purposes	362	372	367
Relating Theory to Practice	363	381	372
AVERAGE	358	367	362
College Preparatory:			
Continuing Social Growth	411	409	410
Time and Money Expenditure	400	391	396
Occupationally Oriented Curriculum	305	329	317
Clear and Specific Purposes	385	408	396
Relating Theory to Practice	369	363	366
AVERAGE	374	380	377
GRAND AVERAGE	383	388	386

The means for a single factor are reported as averages in the tables. The same interactions plus the comparisons of dimensions, curricula, and tests are depicted graphically in Figures 3.1--3.3.

Since in this study changes in scores from pretest to posttest are under consideration, only those comparisons involving tests have any bearing on the question posed in the statement of the problem. It can be noted in Table 3.1 that none of the comparisons involving tests are significant. Thus, the hypothesis that there is no significant interaction or that there is no difference between pretest and posttest scores is not rejected.

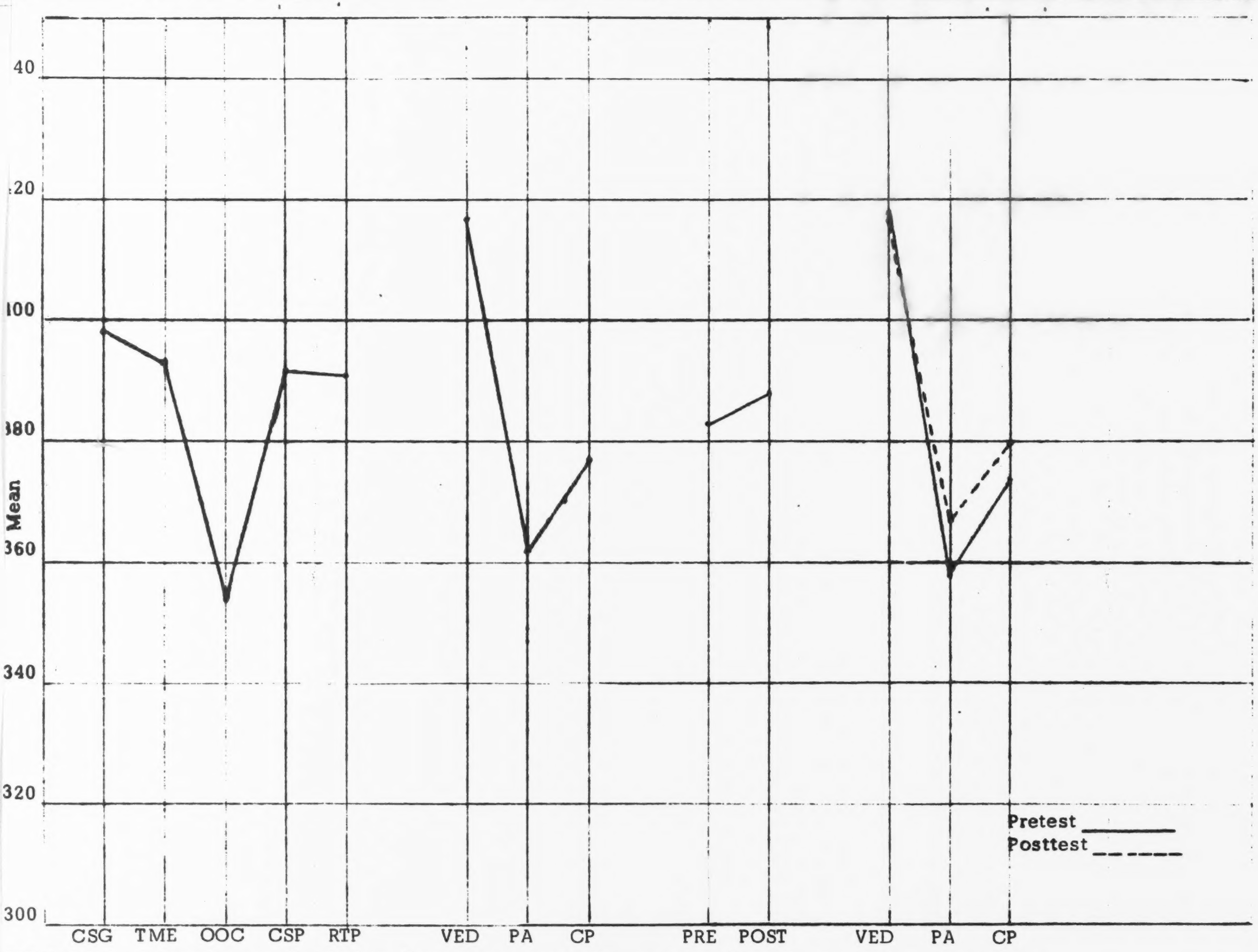

FIGURE 3.1 Comparisons: Curriculum dimensions, curricula, tests, and test by curriculum interactions.

The nonsignificant triple interaction means that the changes from pretest to posttest for each dimension are about the same for each curricula. See Figure 3.3 or Table 3.5. The nonsignificant two-way interaction between test and dimension indicates that pretest-posttest changes are approximately the same for each of the dimensions. That this statement is true is obvious from Figure 3.2 or Table 3.3. Although the changes for continuing social growth are smaller than the other four, the difference may be attributable to change. The nonsignificant two-way interaction between test and curriculum tells the same story. The pretest to posttest change does not differ from curriculum to curriculum. Changes for vocational education are smaller but not significantly so. See Figure 3.1 or Table 3.2. When the other two dimensions are collapsed (the tests of significance indicate that they can be), little difference is evident between the pretest and posttest means. See Figure 3.1 or Table 3.2. The mean for the pretest was 383, compared to a mean of 388 for the posttest.

Differences between Pretest Groups

Since only 21 cases took both a pretest and posttest, it was considered desirable to determine what differences exist between these 21 cases and the 25 cases who took only a pretest. The question to be answered was, "Are the results for pretest and posttests generalizable to the other 25 cases?"

Again a three factor treatments-by-subjects analysis of variance was used to compare the two groups. The three factors of the previous analysis of variance constituted the characteristics on which the groups were compared. The analysis of variance is presented in Table 3.6.

Table 3.6

Analysis of Variance of Pretest Attitudes

Source	Sum of Squares	Degrees of Freedom	Mean Square	F
Between Persons	798,420.929	45		
Between Groups (G)	272.037	1	272.037	<1
Error (b)	798,148.892	44	18,139.748	
Within Persons	2,127,106.000	644		
Between Curricula (C)	186,941.603	2	93,470.802	34.97**
Between Dimensions (D)	115,648.443	4	28,912.111	10.82**
G x C	44,323.754	2	22,161.877	8.29**
G x D	25,663.933	4	6,415.983	2.40*
C x D	104,900.818	8	13,112.602	4.91**
G x C x D	6,886,504	8	860.813	1
Error (w)	1,646,701.663	616	2,673.217	
TOTAL	2,925,826.929	689		

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* Significant at or Beyond the .05 Level.
** Significant at or Beyond the .01 Level.

Means for the various interactions are given in Tables 3.7--3.10.

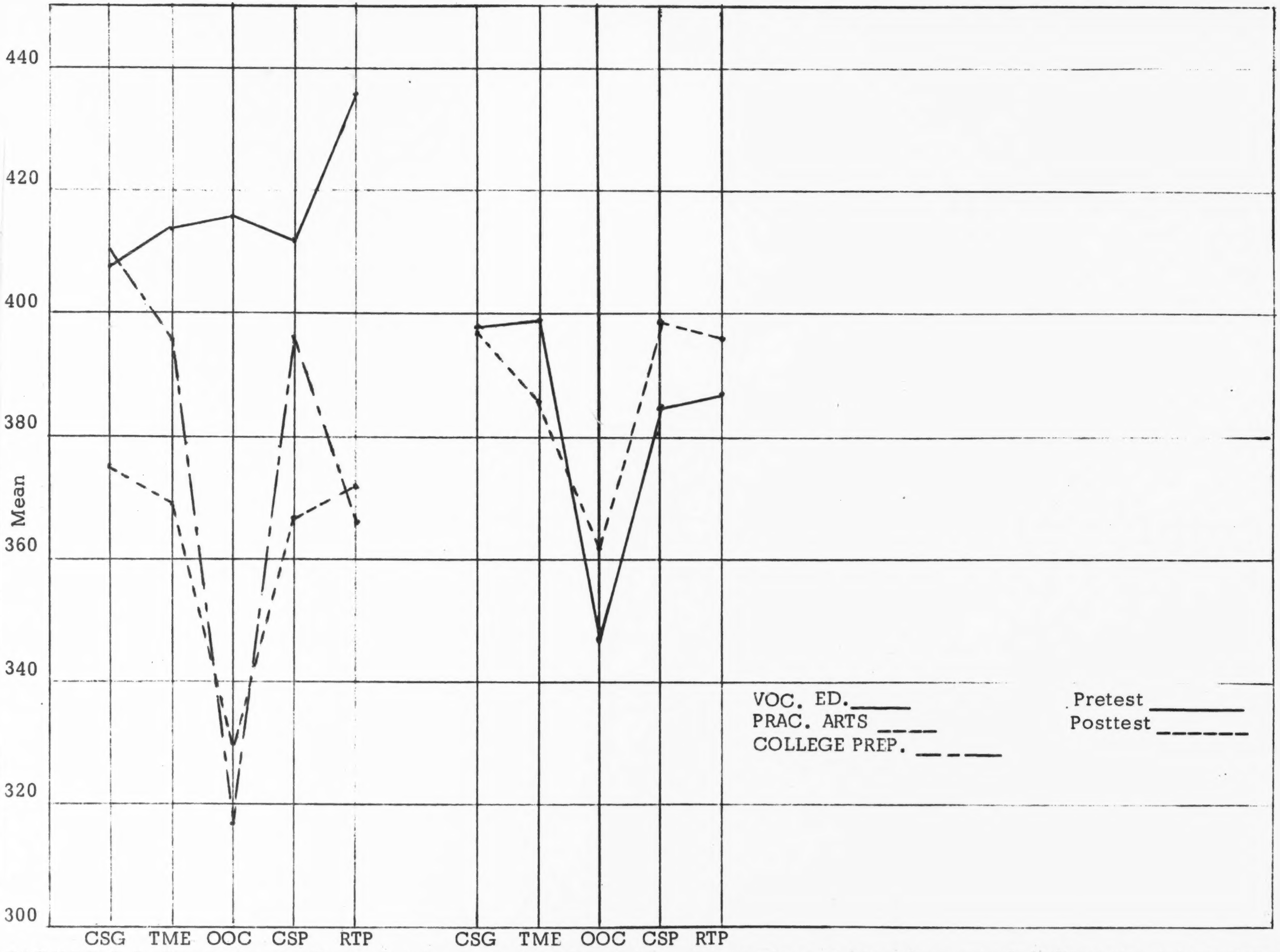


FIGURE 3.2 Comparisons: Curriculum by curriculum dimensions, interactions and test by curriculum dimension interactions.

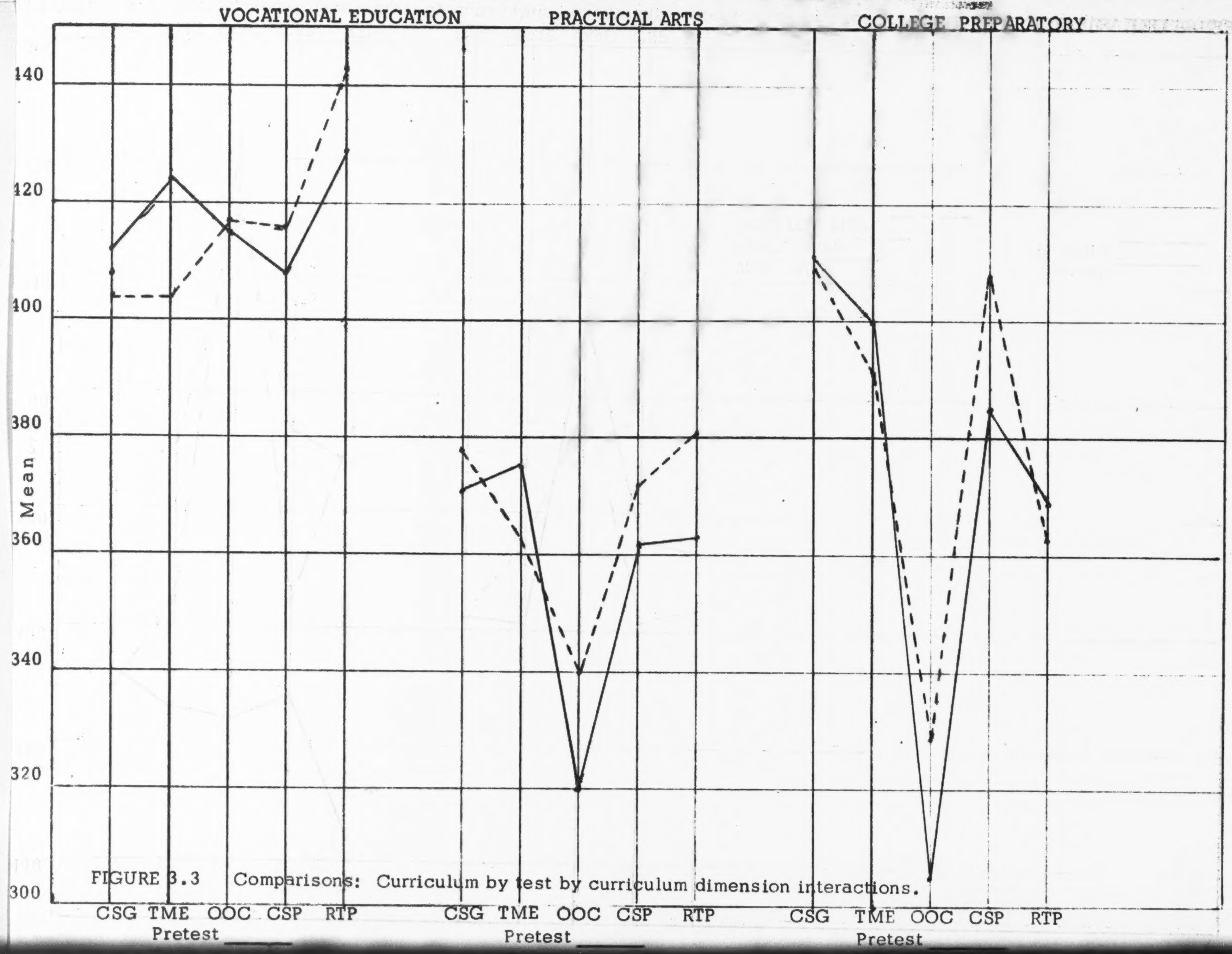


FIGURE 3.3 Comparisons: Curriculum by test by curriculum dimension interactions.

Table 3.7

Analysis of Variance of Pretest Attitudes:

Means of Groups for Each Curricula and Average Means

Curriculum	Group 1	Group 2	Group Average
Vocational Education	418	397	407
Practical Arts	358	376	367
College Preparatory	374	380	377
AVERAGE	383	384	384

Table 3.8

Analysis of Variance of Pretest Attitudes:

Means of Groups for Each Dimension and Average Means

Dimension	Group 1	Group 2	Group Average
Continuing Social Growth	398	392	395
Time and Money Expenditure	399	391	395
Occupationally Oriented Curriculum	347	370	359
Clear and Specific Purposes	385	390	387
Relating Theory to Practice	387	379	383
AVERAGE	383	384	384

Table 3.9

Analysis of Variance of Pretest Attitudes:

Means of Curricula for Each Dimension and Average Means

Dimension	Vocational Education	Practical Arts	College Preparatory	Average
Continuing Social Growth	402	378	406	395
Time and Money Expenditure	411	381	394	395
Occupationally Oriented Curriculum	410	340	326	359
Clear and Specific Purposes	403	370	389	387
Relating Theory to Practice	412	367	369	383
AVERAGE	407	367	377	384

Table 3.10

Analysis of Variance of Pretest Attitudes:

Means of Groups for Each Attitude and for Each Curricula and Average Means

Curriculum and Attitude	Group 1	Group 2	Group Average
Vocational Education:			
Continuing Social Growth	412	391	402
Time and Money Expenditure	424	397	411
Occupationally Oriented Curriculum	415	405	410
Clear and Specific Purposes	408	398	403
Relating Theory to Practice	429	396	412
AVERAGE	418	397	407
Practical Arts:			
Continuing Social Growth	371	384	378
Time and Money Expenditure	375	387	381
Occupationally Oriented Curriculum	320	361	340
Clear and Specific Purposes	362	378	370
Relating Theory to Practice	363	371	367
AVERAGE	358	376	367
College Preparatory:			
Continuing Social Growth	411	402	406
Time and Money Expenditure	400	388	394
Occupationally Oriented Curriculum	305	346	326
Clear and Specific Purposes	385	394	389
Relating Theory to Practice	369	369	369
AVERAGE	374	380	377
GRAND AVERAGE	383	384	384

Graphs of the comparisons of means are shown in Figures 3.4--3.6.

The comparisons of interest are those involving the two groups. It will be noted first of all that there is no significant triple interaction. See Table 3.6. The group by dimension interaction appears to be about the same for each of the curricula. Figure 3.6 or Table 3.10 indicates that Group 1, the group considered in the previous analysis of variance, did somewhat better than Group 2 in vocational education, and that the reverse was true for practical arts. However, the results may be attributable to chance, and the curriculum factor may be collapsed. When the group by dimension

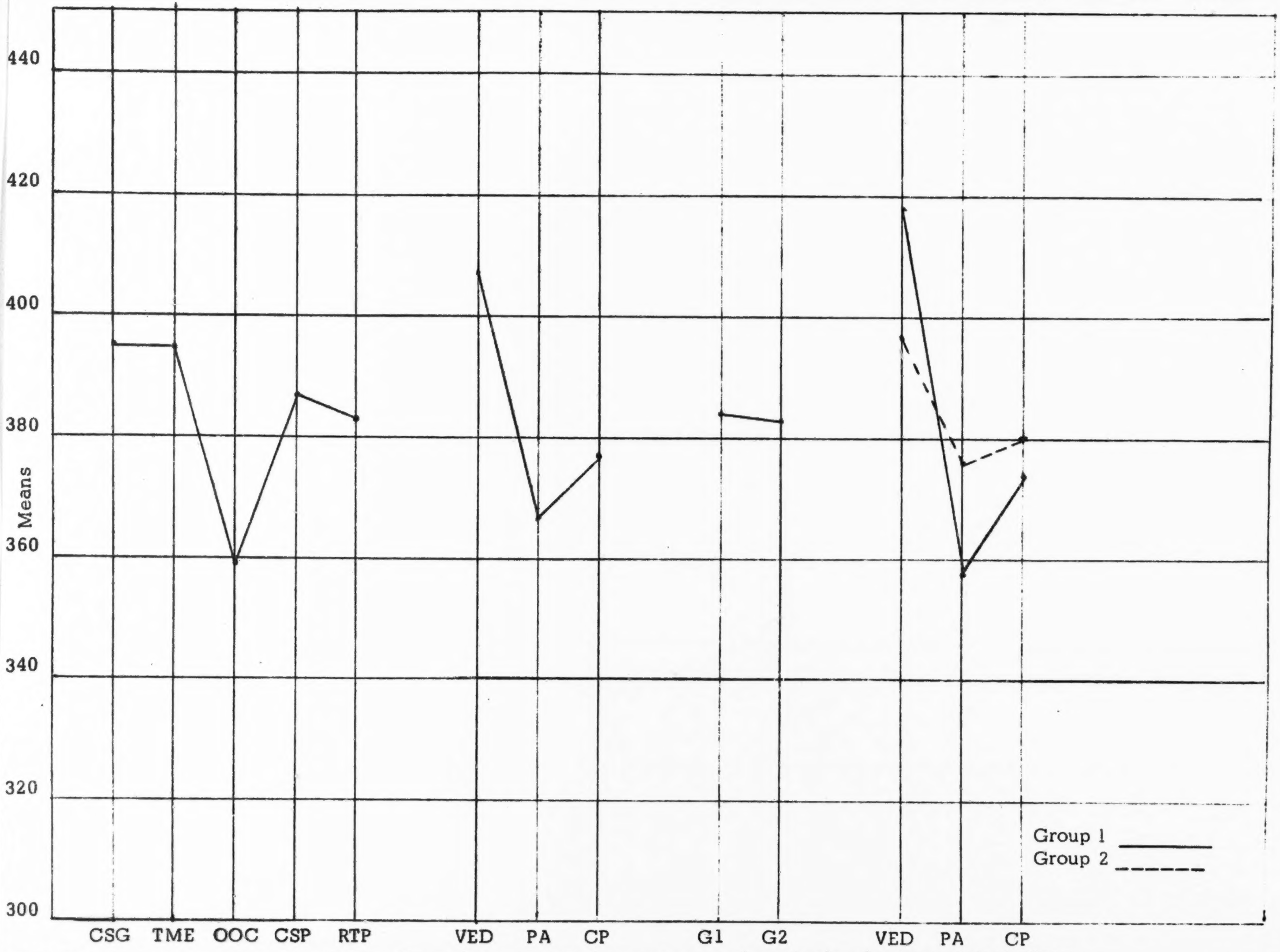
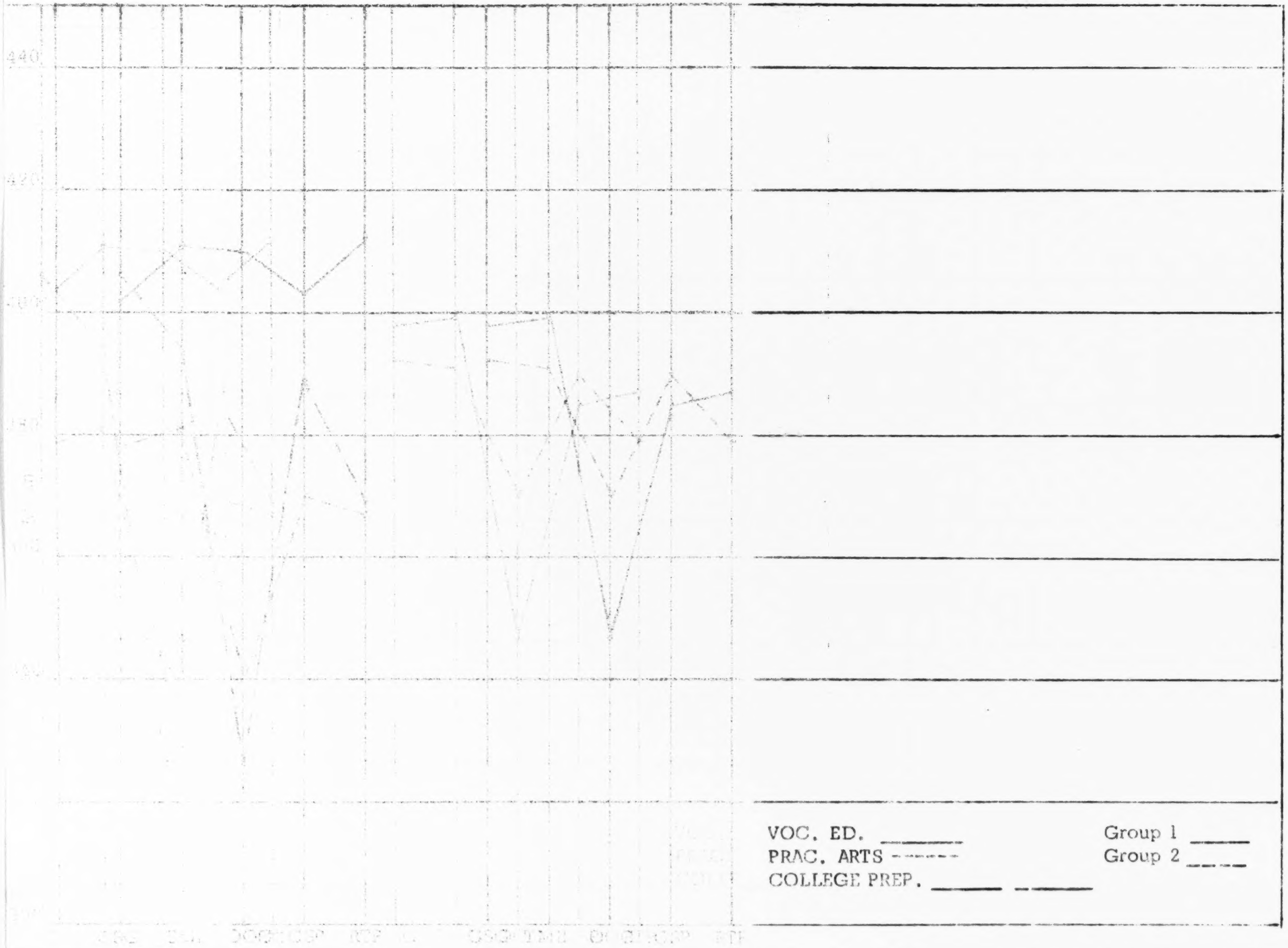


FIGURE 3.4 Comparisons: Curriculum dimensions, curricula, groups, and curriculum by group interactions.



by curriculum dimension interactions.

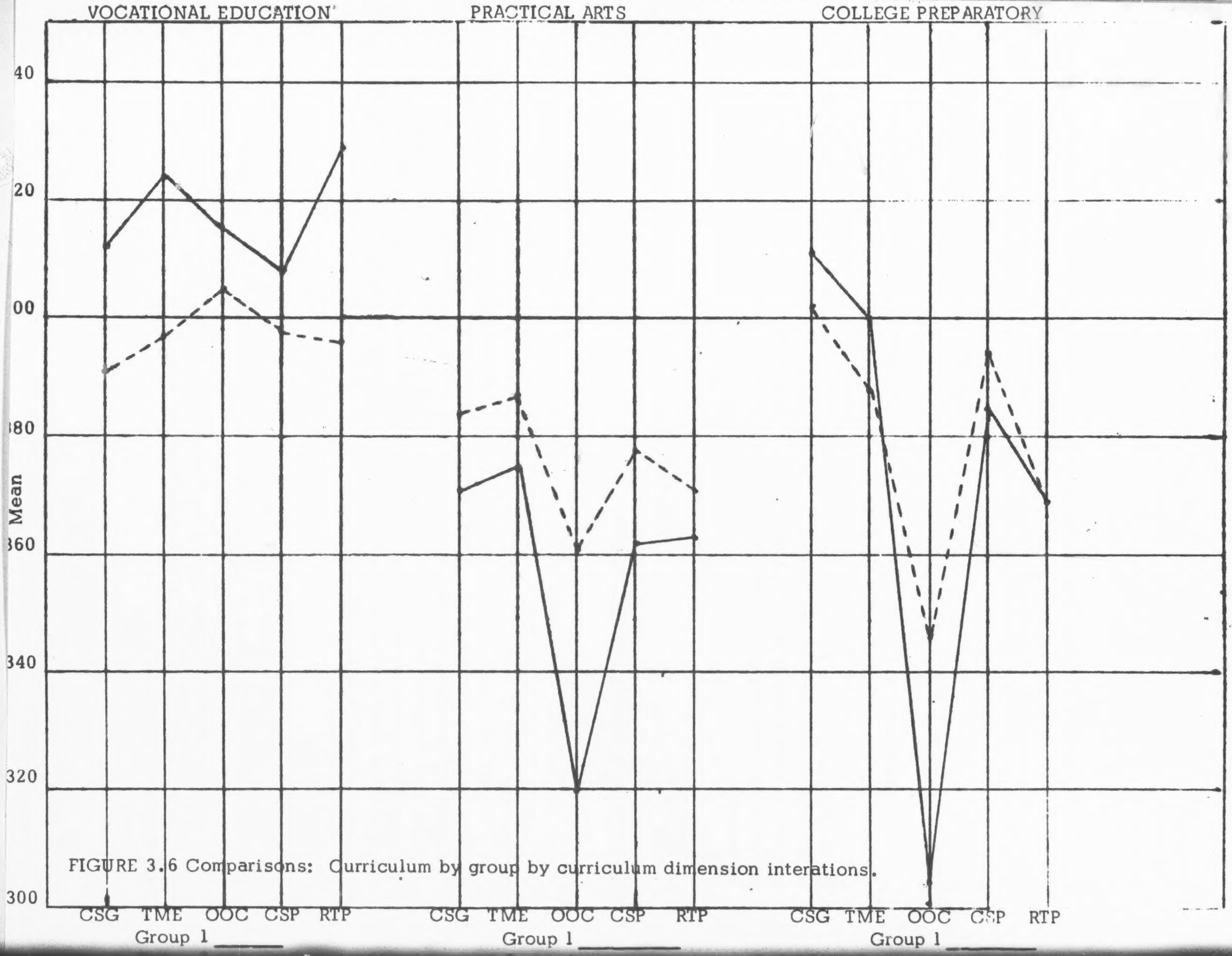


FIGURE 3.6 Comparisons: Curriculum by group by curriculum dimension interations.

interaction is considered across all curricula, the difference is significant. The difference particularly obvious from Figure 3.5 or Table 3.8 is the difference between Group 1 and Group 2 for occupationally oriented curriculum. The means are 347 and 370, respectively. The other differences are quite small.

The interaction between groups and curricula is also significant. The differences between the two groups can be noted from Figure 3.4 or Table 3.7. Although Group 1 has a higher mean attitude toward vocational education, it has lower mean attitudes toward practical arts and college preparatory. The means in vocational education were 418 and 397 for Groups 1 and 2, respectively, while the means in practical arts for the respective groups were 358 and 376; and the means in college preparatory were 374 and 380.

It is inappropriate to carry the comparison of the groups any further because the two-way interaction indicates that it is necessary to compare the groups for each curriculum and each dimension rather than across curricula or dimensions. It has been pointed out that significant differences appear between the two groups in attitude toward curricula with regard to occupationally oriented curriculum and in attitude toward the separate curricula. The null hypothesis, that the two groups do not differ with regard to dimensions and curricula, is rejected in these two instances.

Discussion

Explanation of Pretest-Posttest Results

These are several reasons why no differences in attitudes were found from pretest to posttest. One possible explanation is the unreliability of the instrument. Instructions to the subjects who took the semantic differential were very brief. No attempt was made to clarify in the subjects' minds what is meant by "continuing social growth" or "time and money expenditures," for example. Nor was any attempt made to distinguish between the three curricula, but particularly between vocational education and practical arts education when the B scales were given. It is also possible that different ideas about what the dimensions (CSG, TME, etc.) meant developed during the project. Thus it is possible that the project influenced attitudes but that misunderstanding concerning the concepts at the first administration of the instrument (a factor contributing to unreliability) nullified the attempt to measure the change.

Another explanation for the "no gain" result is that the teachers of vocational education, who were primary participants in the project, had a very positive attitude toward vocational education in the beginning. Since the project was designed to influence attitudes toward vocational education more than attitudes toward the other two curricula, there may have been a ceiling effect. (NOTE: The mean for vocational education was well over 400.) It is reasonable to assume that no gain could be expected in other curricula.

A third explanation for the result is that there was no direct attempt to influence attitudes during the project. A primary objective of the project activities was to improve the teaching effectiveness of the teachers involved. If changes in attitude occurred, they occurred indirectly. Thus the result may indeed be true, and not attributable to the unreliability of the instrument or to a ceiling effect or to any other factor.

A fourth explanation is related to the validity of the instrument. It is possible that all of the significant dimensions were not identified. Validity results from the current study indicated that "Clear and Specific Purposes" and "Relating Theory to Practice" are two dimensions that are open to question. If significant dimensions were not identified, large sources of variance may have gone unidentified.

A final explanation of the results is that Group 1 (the group that took both the pretest and the posttest) was not representative of the participants in the project. In the analysis of variance of pretest attitudes, several characteristics on which Group 1 differed from Group 2 were identified. Thus it is probably not wise to generalize the results for Group 1 to Group 2 . If posttest scores had been available for Group 2, the final results may have differed.

Evaluation of Program Changes

The long-term effectiveness of the project can be measured, in part, by the extent to which the program in vocational and practical arts education improves, and this can be reflected by financial expenditures, pupil enrollment, and instructional offerings. Although the comparisons to be made involve the 1965-66 and the 1966-67 school year, the following information is included to establish a basis for the comparison and indicate possible trends.

Table 3.11

Funds for Vocational Education Expresses as a

Percentage of Total Assessed Valuation

	Vocational Education	Total Budget	Total Assessed Valuation	School Tax Rate	Percentage
1964-65		$4,827,538.39	$ 144,513,799.00	$ 2.78	
1965-66		4,923,232.00	329,711,282.00	1.27	

Table 3.12

Capital Expenditures for Facilities and Equipment for Vocational and Practical Arts Education

	State	Federal	Local	Total
1964-65	$154,273.00	$166,773.00	$12,500.00	$333,546.00
1965-66				

Table 3.13

Comparison of Hours of Instruction in Vocational and Practical Arts Education and All Other Subjects

	Day Vocational	Evening Vocational	Total Vocational	Total High School
1964-65	381,750	27,684	423,174	
1965-66	456,000			

Table 3.14

Comparison of Enrollment in Vocational and Practical Arts and Total School Enrollment

	Enrollment			
	Vocational Education	Practical Arts	Total	Total School Enrollment
1964-65	504	1272	1812	3098
1965-66	608	1227	1835	3132

Table 3.15

Students Dropping Out of Schools Expressed as a Percentage of Total School

	Total High School Enrollment Beg. School Year	Dropouts Boys	Girls	Total	Percentage
1964-65	3098	21	16	37	.011
1965-66	3132	33	20	53	.016

Evaluation of Phase I

At the end of Phase I, the vocational and practical arts education teachers were asked to indicate their feelings toward those facets of the project that appeared to be of critical importance to the project. An informal assessment was obtained by using the important facets of the project as the attitude objects. The set of scales related to attitude used to evaluate the dimensions on the semantic differential were also used for this assessment. See Appendix C for entire instrument.

Table 3.16

Teachers' Perception of Important Facets of the Curriculum Project

Project Activity	Total Score	N	Mean Score
Increased Interest by State and Local Groups	767	26	29.50
Visits to Vocational Schools	730	24	30.41
Use of Curriculum Consultants	770	26	29.61
Appointment of Curriculum Advisory Committees	762	26	29.30
Curriculum Conference	768	26	29.53

The scoring procedure used with this instrument was similar to the one used with the semantic differential. Each bipolar adjective scale was a graduated scale of seven steps with a value of one assigned to each step. The score for each teachers' perception of the important facets of the project could range from 7 to 35 (total of 5 scales). The following scale was used to interpret the mean score values:

Excellent	28.6 - 35
Good	23.2 - 28.5
Average	17.8 - 23.1
Fair	12.4 - 17.7
Poor	7 - 12.3

The data shown in Table 3.16 clearly indicates that the teachers participating in the project had very positive attitudes toward the important facets of the project; their feelings ranked in the "excellent" category.

Limitations of the Study

Some limitations of the study should be pointed out. Some have already been alluded to in the previous section, namely, the possible unreliability and invalidity of the instrument, however, there are others.

One important limitation that should not be overlooked is the design used to assess differences in attitudes. The practice of using a single group for pretest and posttest comparisons leaves much to be desired. Since no comparison can be made with a control group, it can never be known whether the treatment or some other factors actually caused the results. These "either factors" might be maturation of the subjects, history--that is, other significant events going on simultaneously with the treatment, reaction to the pretest, or any number of others.

In extenuation and mitigation, it should be pointed out that in some real-life situations there is really no choice. To wait until conditions are perfect for an experiment, much useful research would never be done. It is necessary to do the best that can be done under the circumstances. In this study, it would have been very difficult to find a group similar enough to the one participating in the project to serve as a control group.

A problem caused by the failure to identify the Committee of 100 as conceived in the proposal was the inability to assess their concept orientation regarding vocational and practical arts education. Only two meetings of the Committee were held; one in December 1965 and another in May, 1966. At the time of the second meeting, Phase I of the project could not fulfill its role as originally conceived in the project.

Another limitation of the study was the agreement early in the project by the Steering Committee to act as the Advisory Committee.

As initially conceived, the Advisory Committee was to be representative of the institutions, agencies, and groups of importance to vocational and practical arts education in the community. It is obvious that the Steering Committee, representing Bayonne City Schools, Trenton State College, and the State Department of Education, Vocational Division, could not perform the same function.

Another limitation of the project was the omission of the recommended Committee of 100 which precluded an objective evaluation of their change in concept orientation regarding vocational and practical arts education. As a result, the data used in the assessment of concept orientation is based on the vocational and practical arts teachers that participated in the project.

Finally, it should be noted that occasionally administrative problems made it extremely difficult to satisfy all groups or interests involved in the project within a reasonable period of time. It would appear that definite, tangible results occurred during the project; a more positive feeling toward vocational education and practical arts education evolved.

GENERAL RECOMMENDATIONS FOR FURTHER APPLICATION OF THE JUDGMENTAL PROCESS IN PRACTICAL ARTS AND VOCATIONAL EDUCATION

This process rests heavily on the assumption that the state department of education, the state college and/or university, and the local school system each have unique and significant contributions to make in determining needed improvements in vocational and practical arts education. It further assumes that the best results can be achieved in accordance with the extent to which these unique and significant contributions can be brought to bear on significant problems. This requires unselfish cooperation of each of the groups. It is extremely important that each of the participating agencies and/or institutions, as well as the principal participants, bear this assumption in mind in connection with their recommendations and/or action.

Attention was called earlier in this report to some of the social forces which curriculum workers must take into account when considering improvements in vocational and practical arts education. The implication of presenting these social conditions was to point up the urgency of the need for change. The general position of the study suggests that a wider gap between vocational and practical arts education and social needs in general, industrial needs in particular, can be expected unless serious study is devoted to the process by which changes take place when human beings are involved. The wide gap which exists between research evidence and quality programs in vocational education, on the one hand, and the average vocational education program, on the other hand, is evidence of failure to give due regard to this problem. One illustration will be given to clarify this point. The need for, and guidelines related to the use of general and specialized advisory committees have been known for decades; yet, the use of advisory committees consistent with the guidelines is rarely found in practical arts and vocational education. Too often, these committees simply serve as a means of satisfying policy.

As has been previously reported, the outcome of this study generally supports the application of judgmental process in implementing change in practical arts and vocational education; although, the evaluation techniques which were used in this study and those applied generally in practical arts and vocational education need serious consideration and leave much to be desired.

As was noted, it was pointed out by Smith, Stanley, and Shores (1962) that "the judgmental procedure is most conveniently described in broad outlines." No attempt to systematically apply this process could be found. The experience gained from this study was used as the basis of the suggested procedure to which the Program Evaluation Review Technique has been applied as presented in Figure 3.7.

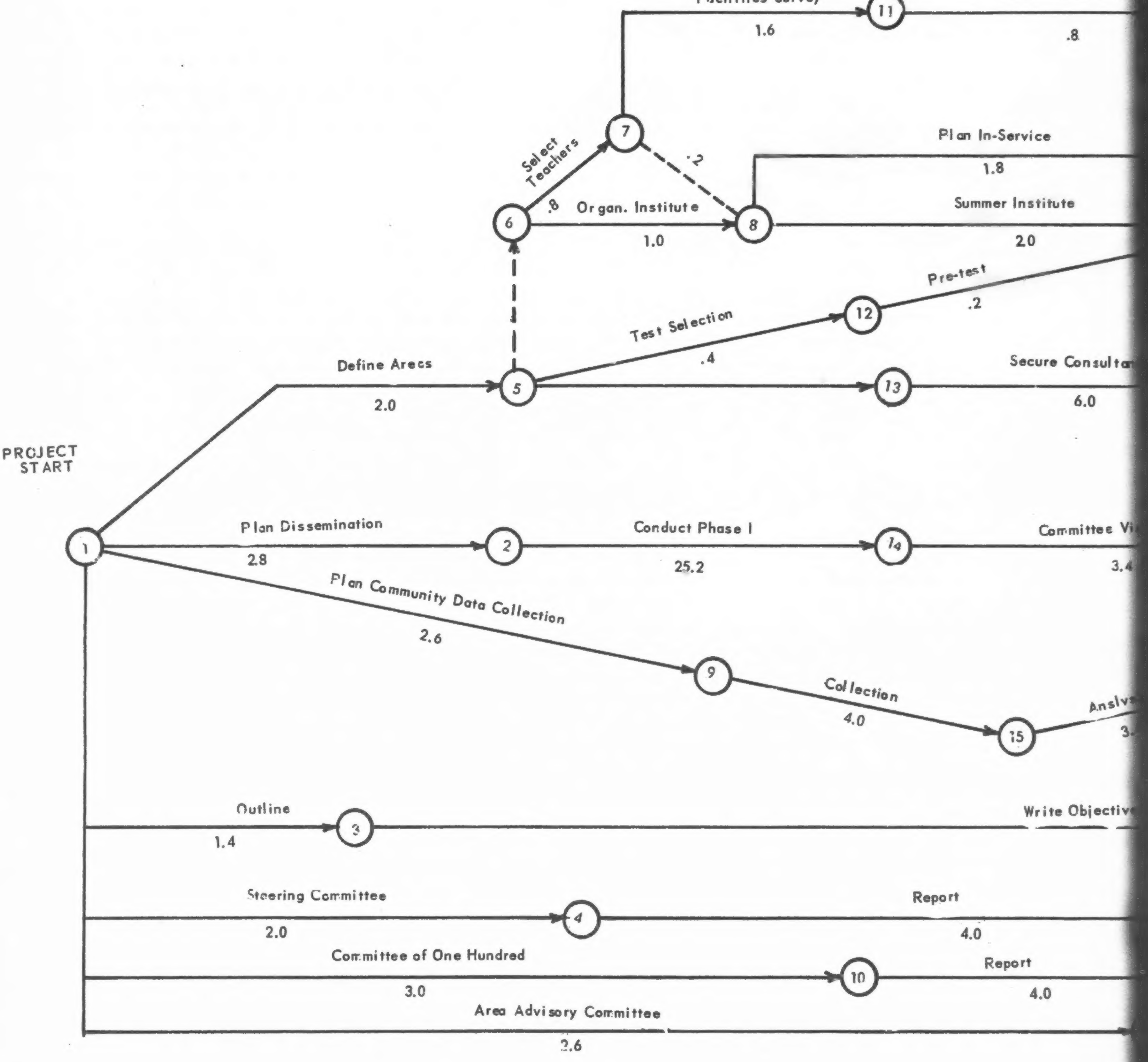
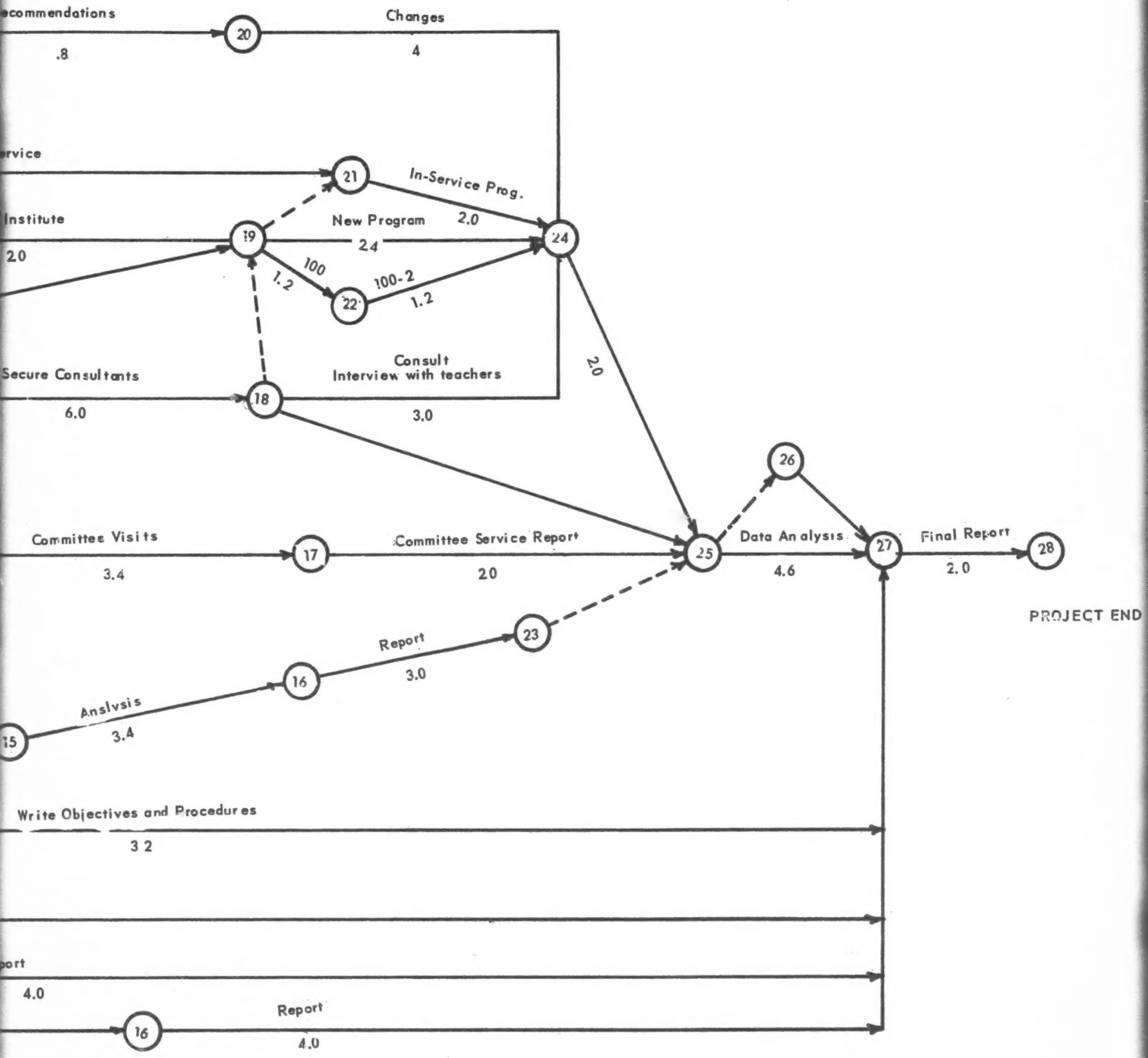


Figure 3.7 A

Procedures Employed in

TIME: 10 MONTHS
FIGURE: 3.7



igure 3.7 A

s Employed in This Study

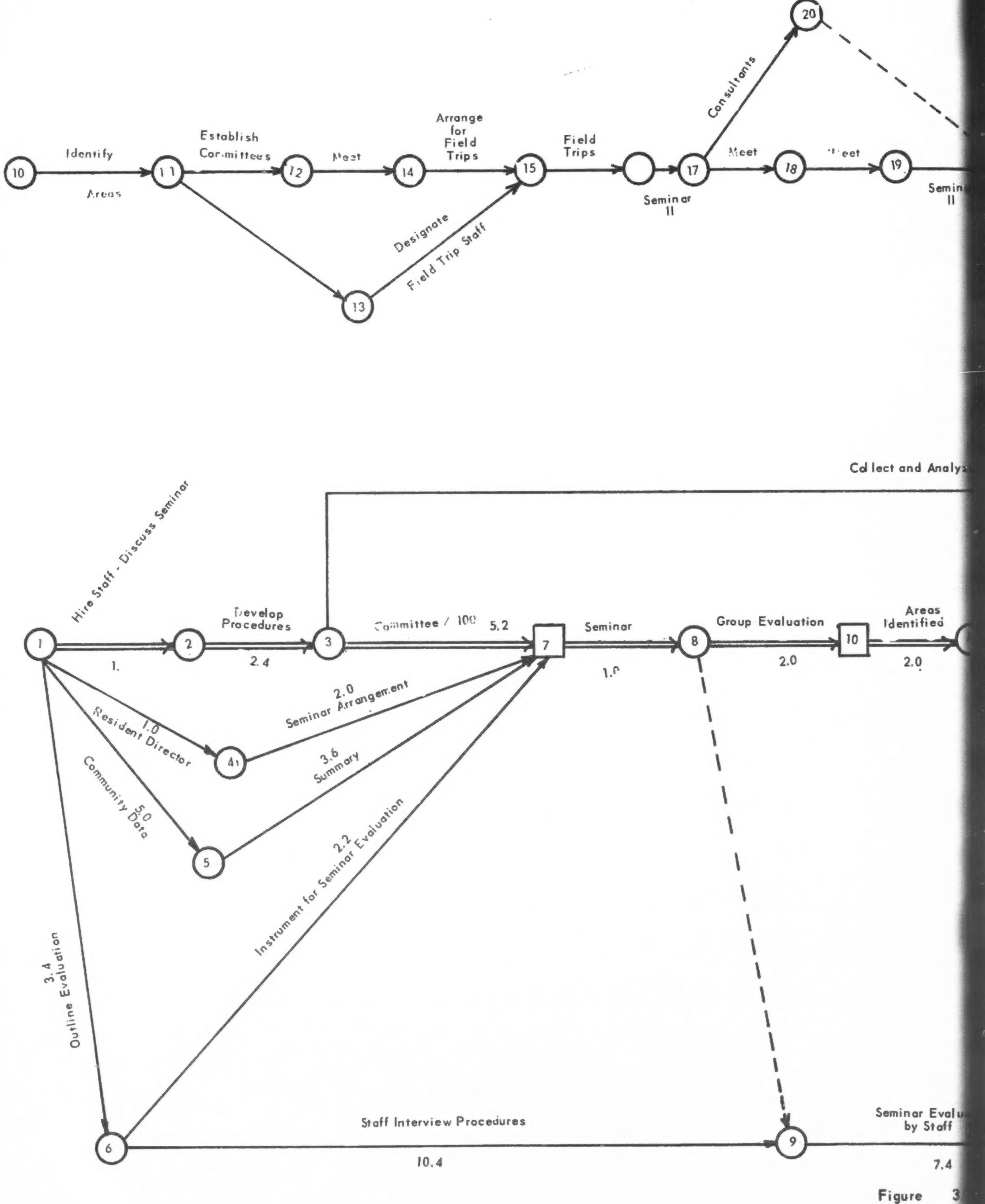
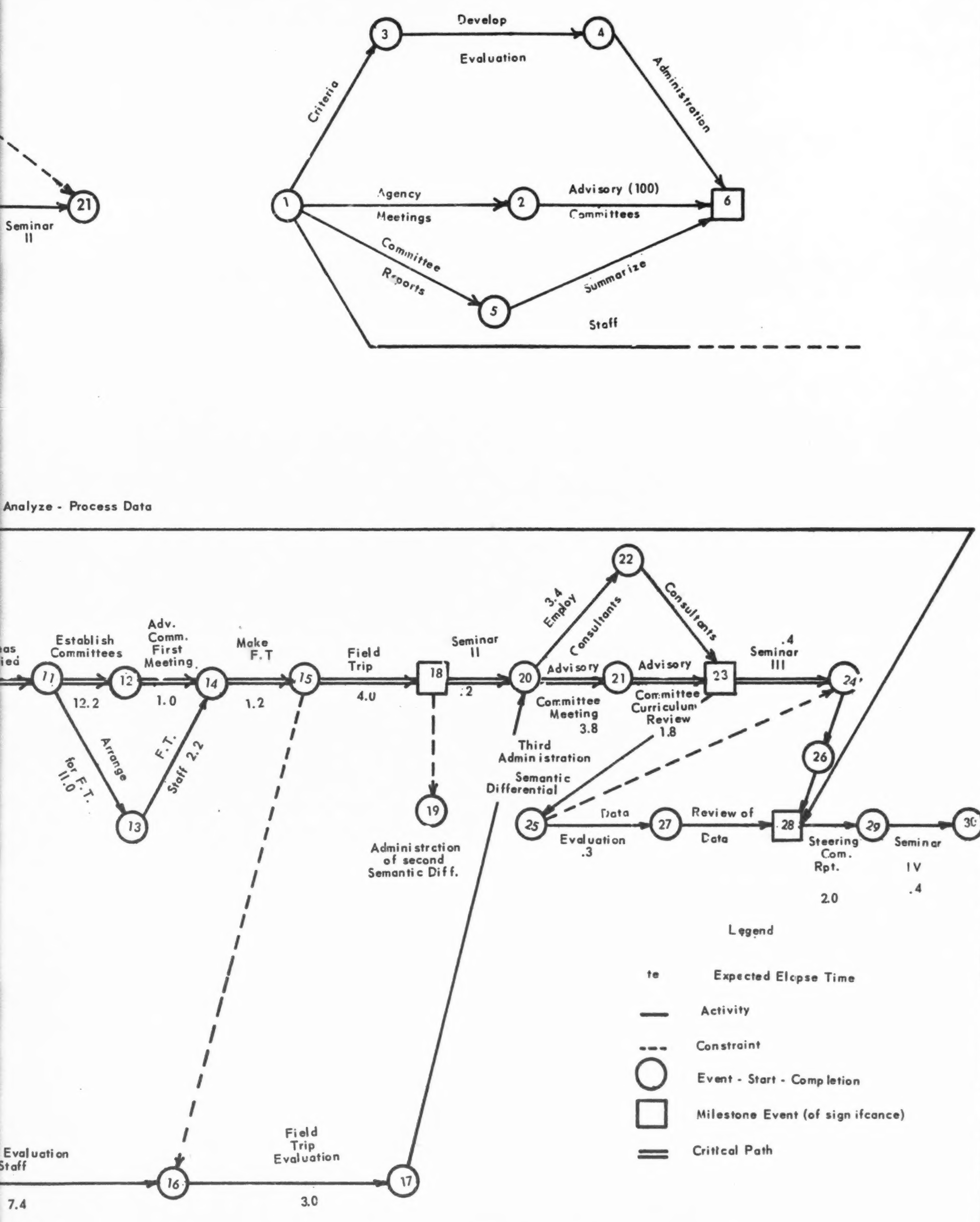


Figure 3

Recommended Procedures for Fu



3.7 B

or Future Use of This Procedure

This investigator believes that a more adequate test of this procedure is indicat under more favorable conditions. Essentially, the same procedures would be en and modified as indicated on the PERT Chart which has just been presented. Fi oyed it is strongly recommended that the points outlined below be regarded with care ly,

1. Principal staff members should be either familiar with the process or they should be interested in and willing to study the process. All of the principal participants, including the steering committee should be thoroughly familiar with the proposal, and there should be agreement to abide by the proposal. Where there seems to be a defensible reason to change some major aspect of the program, it should be done with the agreement of the principal participants, within the framework outlined by the funding agency or that established by the steering committee. Where there is some question with regard to certain kinds of actions falling within or beyond the framework of the process, the project outlined should be consulted for the views of the Principal Investigator, who must be familiar with the process and whose views should be respected

2. The process calls for involvement of numerous citizens on various committees. It is unlikely that existing committees will be able to devote sufficient time to it.

3. The program should be "PERTED" and all the major participants should agree on major aspects of the procedure.

4. The initial date of the project should take cognizance of the avail bility of staff needs.

5. Because of the inadequacy of research techniques which utilize quantifiable data to which research procedures are applied in the evaluation of human behavior, the use of a process observer as a means of evaluation and keeping the process within the framewor of its goals is strongly recommended.

6. College personnel, state department of education personnel, as well as the local school system personnel, should be involved in every aspect of the study; seminars, advisory committee meeting and field trips are representative of the types of activities referre to. It is recalled that each of these groups is to profit from the interaction which takes place in the study. This provision will increase the interaction as well as the exposure of these groups.

7. Provisions should be made in funding to provide released time, or compensation should be provided for state college personnel a state department of education personnel as well as the local sch system teachers. It is unreasonable to expect these persons to in position to make their maximum contribution without this provi,

8. One of the major barriers to improving communication among these groups resides in the actual or implied exercise of authority by state department of education and local school officials. Of equal importance is the barrier exercised by the authority figure attitude of the college personnel. This process, more than any other, requires that these attitudes be put aside.

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APPENDIX A

DIRECTIONS

You are being asked to cooperate in assessing the role of practical arts and vocational education in the public secondary schools. On the attached sheets you will find pairs of adjectives separated by seven spaces. On each sheet a phrase is given which you are asked to rate on the scales. Mark each scale as follows if you feel that the phrase given is:

very closely associated with the left end of the scale

long __X__ _____ _____ _____ _____ _____ _____ short

quite closely associated with the left end of the scale

long _____ __X__ _____ _____ _____ _____ _____ short

only slightly associated with the left end of the scale

long _____ _____ __X__ _____ _____ _____ _____ short

equally associated with the ends of the scale

long _____ _____ _____ __X__ _____ _____ _____ short

only slightly associated with the right end of the scale

long _____ _____ _____ _____ __X__ _____ _____ short

quite closely associated with the right end of the scale

long _____ _____ _____ _____ _____ __X__ _____ short

very closely associated with the right end of the scale

long _____ _____ _____ _____ _____ _____ __X__ short

REMEMBER: *(1) work rapidly (2) put one check mark per scale (3) check every item*

APPENDIX A

CONTINUING SOCIAL GROWTH

harmful ____ ____ ____ ____ ____ ____ ____ beneficial

bad ____ ____ ____ ____ ____ ____ ____ good

wise ____ ____ ____ ____ ____ ____ ____ foolish

new ____ ____ ____ ____ ____ ____ ____ old

unimportant ____ ____ ____ ____ ____ ____ ____ important

TIME AND MONEY EXPENDITURES

harmful ____ ____ ____ ____ ____ ____ ____ beneficial

bad ____ ____ ____ ____ ____ ____ ____ good

wise ____ ____ ____ ____ ____ ____ ____ foolish

new ____ ____ ____ ____ ____ ____ ____ old

unimportant ____ ____ ____ ____ ____ ____ ____ important

OCCUPATIONALLY ORIENTED CURRICULUM

harmful ____ ____ ____ ____ ____ ____ ____ beneficial

bad ____ ____ ____ ____ ____ ____ ____ good

wise ____ ____ ____ ____ ____ ____ ____ foolish

new ____ ____ ____ ____ ____ ____ ____ old

unimportant ____ ____ ____ ____ ____ ____ ____ important

CLEAR AND SPECIFIC PURPOSES

harmful ____ ____ ____ ____ ____ ____ ____ beneficial

bad ____ ____ ____ ____ ____ ____ ____ good

wise ____ ____ ____ ____ ____ ____ ____ foolish

new ____ ____ ____ ____ ____ ____ ____ old

unimportant ____ ____ ____ ____ ____ ____ ____ important

APPENDIX A (Cont.)

RELATING THEORY TO PRACTICE

harmful ____ ____ ____ ____ ____ ____ ____ beneficial

bad ____ ____ ____ ____ ____ ____ ____ good

wise ____ ____ ____ ____ ____ ____ ____ foolish

new ____ ____ ____ ____ ____ ____ ____ old

unimportant ____ ____ ____ ____ ____ ____ ____ important

VOCATIONAL EDUCATION CONTRIBUTES TO CONTINUING SOCIAL GROWTH

possible ____ ____ ____ ____ ____ ____ ____ impossible

unlikely ____ ____ ____ ____ ____ ____ ____ likely

existent ____ ____ ____ ____ ____ ____ ____ nonexistent

unsuccessful ____ ____ ____ ____ ____ ____ ____ successful

true ____ ____ ____ ____ ____ ____ ____ false

VOCATIONAL EDUCATION JUSTIFIES TIME AND MONEY EXPENDITURES

possible ____ ____ ____ ____ ____ ____ ____ impossible

unlikely ____ ____ ____ ____ ____ ____ ____ likely

existent ____ ____ ____ ____ ____ ____ ____ nonexistent

unsuccessful ____ ____ ____ ____ ____ ____ ____ successful

true ____ ____ ____ ____ ____ ____ ____ false

VOCATIONAL EDUCATION IS AN EXAMPLE OF OCCUPATIONALLY ORIENTED CURRICULUM

possible ____ ____ ____ ____ ____ ____ ____ impossible

unlikely ____ ____ ____ ____ ____ ____ ____ likely

existent ____ ____ ____ ____ ____ ____ ____ nonexistent

unsuccessful ____ ____ ____ ____ ____ ____ ____ successful

true ____ ____ ____ ____ ____ ____ ____ false

APPENDIX A (Con't.)

VOCATIONAL EDUCATION HAS A CLEAR AND SPECIFIC PURPOSE

possible ___ ___ ___ ___ ___ ___ ___ impossible

unlikely ___ ___ ___ ___ ___ ___ ___ likely

existent ___ ___ ___ ___ ___ ___ ___ nonexistent

unsuccessful ___ ___ ___ ___ ___ ___ ___ successful

true ___ ___ ___ ___ ___ ___ ___ false

VOCATIONAL EDUCATION IS CAPABLE OF RELATING THEORY TO PRACTICE

possible ___ ___ ___ ___ ___ ___ ___ impossible

unlikely ___ ___ ___ ___ ___ ___ ___ likely

existent ___ ___ ___ ___ ___ ___ ___ nonexistent

unsuccessful ___ ___ ___ ___ ___ ___ ___ successful

true ___ ___ ___ ___ ___ ___ ___ false

PRACTICAL ARTS EDUCATION CONTRIBUTES TO CONTINUING SOCIAL GROWTH

possible ___ ___ ___ ___ ___ ___ ___ impossible

unlikely ___ ___ ___ ___ ___ ___ ___ likely

existent ___ ___ ___ ___ ___ ___ ___ nonexistent

unsuccessful ___ ___ ___ ___ ___ ___ ___ successful

true ___ ___ ___ ___ ___ ___ ___ false

PRACTICAL ARTS EDUCATION JUSTIFIES TIME AND MONEY EXPENDITURES

possible ___ ___ ___ ___ ___ ___ ___ impossible

unlikely ___ ___ ___ ___ ___ ___ ___ likely

existent ___ ___ ___ ___ ___ ___ ___ nonexistent

unsuccessful ___ ___ ___ ___ ___ ___ ___ successful

true ___ ___ ___ ___ ___ ___ ___ false

PRACTICAL ARTS EDUCATION IS AN EXAMPLE OF OCCUPATIONALLY ORIENTED CURRICULUM

possible ____ ____ ____ ____ ____ ____ ____ impossible

unlikely ____ ____ ____ ____ ____ ____ ____ likely

existent ____ ____ ____ ____ ____ ____ ____ nonexistent

unsuccessful ____ ____ ____ ____ ____ ____ ____ successful

true ____ ____ ____ ____ ____ ____ ____ false

PRACTICAL ARTS EDUCATION HAS A CLEAR AND SPECIFIC PURPOSE

possible ____ ____ ____ ____ ____ ____ ____ impossible

unlikely ____ ____ ____ ____ ____ ____ ____ likely

existent ____ ____ ____ ____ ____ ____ ____ nonexistent

unsuccessful ____ ____ ____ ____ ____ ____ ____ successful

true ____ ____ ____ ____ ____ ____ ____ false

PRACTICAL ARTS EDUCATION IS CAPABLE OF RELATING THEORY TO PRACTICE

possible ____ ____ ____ ____ ____ ____ ____ impossible

unlikely ____ ____ ____ ____ ____ ____ ____ likely

existent ____ ____ ____ ____ ____ ____ ____ nonexistent

unsuccessful ____ ____ ____ ____ ____ ____ ____ successful

true ____ ____ ____ ____ ____ ____ ____ false

COLLEGE PREPARATORY EDUCATION CONTRIBUTES TO CONTINUING SOCIAL GROWTH

possible ____ ____ ____ ____ ____ ____ ____ impossible

unlikely ____ ____ ____ ____ ____ ____ ____ likely

existent ____ ____ ____ ____ ____ ____ ____ nonexistent

unsuccessful ____ ____ ____ ____ ____ ____ ____ successful

true ____ ____ ____ ____ ____ ____ ____ false

APPENDIX A (Con't.)

COLLEGE PREPARATORY EDUCATION JUSTIFIES TIME AND MONEY EXPENDITURES

possible ___ ___ ___ ___ ___ ___ ___ impossible

unlikely ___ ___ ___ ___ ___ ___ ___ likely

existent ___ ___ ___ ___ ___ ___ ___ nonexistent

unsuccessful ___ ___ ___ ___ ___ ___ ___ successful

true ___ ___ ___ ___ ___ ___ ___ false

COLLEGE PREPARATORY EDUCATION IS AN EXAMPLE OF OCCUPATIONALLY ORIENTED CURRICULUM

possible ___ ___ ___ ___ ___ ___ ___ impossible

unlikely ___ ___ ___ ___ ___ ___ ___ likely

existent ___ ___ ___ ___ ___ ___ ___ nonexistent

unsuccessful ___ ___ ___ ___ ___ ___ ___ successful

true ___ ___ ___ ___ ___ ___ ___ false

COLLEGE PREPARATORY EDUCATION HAS A CLEAR AND SPECIFIC PURPOSE

possible ___ ___ ___ ___ ___ ___ ___ impossible

unlikely ___ ___ ___ ___ ___ ___ ___ likely

existent ___ ___ ___ ___ ___ ___ ___ nonexistent

unsuccessful ___ ___ ___ ___ ___ ___ ___ successful

true ___ ___ ___ ___ ___ ___ ___ false

COLLEGE PREPARATORY EDUCATION IS CAPABLE OF RELATING THEORY TO PRACTICE

possible ___ ___ ___ ___ ___ ___ ___ impossible

unlikely ___ ___ ___ ___ ___ ___ ___ likely

existent ___ ___ ___ ___ ___ ___ ___ nonexistent

unsuccessful ___ ___ ___ ___ ___ ___ ___ successful

true ___ ___ ___ ___ ___ ___ ___ false

APPENDIX B

NAME ______________________________

INFORMATION SHEET FOR PROJECT PARTICIPANTS

(1) Sex male____ female ____

(2) Age to nearest year ________

(3) Educational attainment 1 2 3 4 5 6 7 8 9 10 11 12
years of high school

1 2 3 4 5 6 7 8 9
years of college

(4) Current employment ____

(5) Current involvement in education if different from above ________________

____

(6) Number of children currently attending secondary school 1 2 3 4 5 6

(7) Years of teaching experience ________

(8) Years of teaching practical arts _______

(9) Years of teaching vocational education _____

(10) Years of educational adminstration ______

(11) Years on school board(s) _______

APPENDIX C

THE APPOINTMENT OF CURRICULUM ADVISORY COMMITTEES WAS

harmful _____ _____ _____ _____ _____ _____ _____ beneficial

bad _____ _____ _____ _____ _____ _____ _____ good

wise _____ _____ _____ _____ _____ _____ _____ foolish

new _____ _____ _____ _____ _____ _____ _____ old

unimportant _____ _____ _____ _____ _____ _____ _____ important

THE INTEREST SHOWN IN VOCATIONAL EDUCATION BY STATE AND LOCAL GROUPS WAS

harmful _____ _____ _____ _____ _____ _____ _____ beneficial

bad _____ _____ _____ _____ _____ _____ _____ good

wise _____ _____ _____ _____ _____ _____ _____ foolish

new _____ _____ _____ _____ _____ _____ _____ old

unimportant _____ _____ _____ _____ _____ _____ _____ important

THE VISITS TO VOCATIONAL SCHOOLS WERE

harmful _____ _____ _____ _____ _____ _____ _____ beneficial

bad _____ _____ _____ _____ _____ _____ _____ good

wise _____ _____ _____ _____ _____ _____ _____ foolish

new _____ _____ _____ _____ _____ _____ _____ old

unimportant _____ _____ _____ _____ _____ _____ _____ important

THE USE OF CURRICULUM CONSULTANTS WAS

harmful _____ _____ _____ _____ _____ _____ _____ beneficial

bad _____ _____ _____ _____ _____ _____ _____ good

wise _____ _____ _____ _____ _____ _____ _____ foolish

new _____ _____ _____ _____ _____ _____ _____ old

unimportant _____ _____ _____ _____ _____ _____ _____ important

APPENDIX C (Con't.)

THE CURRICULUM CONFERENCE - (DECEMBER 16-17, 1965) WAS

harmful ______ ______ ______ ______ ______ ______ ______ beneficial

bad ______ ______ ______ ______ ______ ______ ______ good

wise ______ ______ ______ ______ ______ ______ ______ foolish

new ______ ______ ______ ______ ______ ______ ______ old

unimportant ______ ______ ______ ______ ______ ______ ______ important

APPENDIX D

Speeches of:

Dr. M. Ray Karnes, Chairman
Vocational and Technical Education
College of Education
University of Illinois
Urbana, Illinois

Dr. Lynn Emerson, Consultant
New Jersey State Department of Education
Trenton, New Jersey
and
Trenton State College, Trenton, New Jersey

Dr. Robert M. Worthington
Assistant Commissioner of Education
Division of Vocational Education
State of New Jersey
Trenton, New Jersey

Dr. E. Walton Jones
Professor of Economics
North Carolina State University
Raleigh, North Carolina

Dr. Elizabeth Jane Simpson, Chairman
Home Economics Education
College of Education
University of Illinois
Urbana, Illinois

Dr. Frank M. Cordasco
Assistant to the President
Jersey City State College
Jersey City, New Jersey

Dr. Chris H. Groneman, Head
Department of Industrial Education
College of Engineering
Texas A. & M. University
College Station, Texas

BAYONNE CURRICULUM RESEARCH PROJECT

Seminar, Bayonne High School Library

Speech of Dr. M. Ray Karnes - Thursday, December 16, 1965

What we will attempt to do in the few minutes following is to present a brief overview of some of the concerns and the problems that might possibly have brought this group together today. I think most of us are aware that there is more interest in and concern about education in America today than ever before in our history. Perhaps the concerns that bring us together today are essentially the same ones that must have prompted the national Congress to pass within the last ten years a whole series of rather significant and important pieces of legislation. I shall not go back earlier than 1958, as I enumerate some of the more substantial measures that have been enacted, some of which are now providing funds to augment, supplement, improve and expand education and educational opportunities, in local communities, in the state, and in the nation.

I have reference first to the National Defense Education Act of 1958. All of you know about that measure, its different titles, the provisions included in the act, and what may be done legally and appropriately with the funds appropriated under the provisions of that measure. Then, moving on up to 1961 we had the Area Redevelopment Act. This was primarily a pump-priming measure designed to stimulate economic growth and economic activity generally in the very severely depressed sections of the country, but it did have a training provision and substantial funds, millions in fact, which have been allocated to the re-training of personnel who otherwise would, in many cases, not be gainfully employed. This measure was followed in 1962 by the Manpower Development and Training Act; and I understand that within this school plant you have training programs going on under the provisions of that act. This act, since its initial passage, has been expanded rather markedly, combined with the Area Redevelopment Act, to provide a rather large package of funds which may be used in the training and re-training of personnel. Then we had in 1963 a tremendous increase in the funds authorized for vocational and technical education, as provided in the new Vocational Education Act of that year. And you, ladies and gentlemen, know something of that measure. This was followed in turn in 1964 with the Economic Opportunity Act of that year. And then in 1965, insofar as the public and perhaps in time the private school is concerned - elementary and secondary - perhaps the most significant act of all, that is the new, massive Elementary-Secondary Education Act of 1965. Now we had some other measures enacted of course, some 47 or 48 pieces of legislation enacted recently by the national Congress, that bear more or less directly upon the problem of educating the youth and adults of this country, such measures for example as the Higher Education Facilities act, to name one.

Now the question is: Why would the National Congress rather suddenly and without much apparent precedent pass this whole series of major acts? - And the precedent incidentally was there in the main; it fell in the area of vocational and technical education, with federal acts providing some support at least to local communities and states for the development of this field, and was administered through the public schools. This dates back now approximately half a century. Before that we had measures designed to upgrade and improve the adult in work station, primarily the farmer. Now these were federal measures not channeled directly through the public schools, but usually administered through land-grant institutions of higher learning. Thus, what precedent we had was mainly in the occupational-training spectrum. - By contast, here in the last ten years the national Congress has authorized the appropriation, and then in turn appropriated, literally millions of dollars for education in America, in one form or another. Not all the money comes through the regularly constituted institution called the school. Business is in the forefront of training now, with large monies being allocated to the large business establishments of this country to re-train and train personnel. We have various agencies involved in this, and all of this prompted by the national Congress, which in turn must have been somewhat responsive at least to concerns that are nationwide in scope and compelling in nature.

Those of you who are directly associated with educational institutions have been using in the last ten years or so, but not much longer than that, some of the terms that perhaps indicate the concerns that we have in mind. I shall just use these terms without elaborating: the school dropout, the school dropout prong, the displaced worker, the technologically unemployed, the older worker, the aged, and the aging, the poverty-stricken, the delinquency-prone youth, the under-educated, unskilled, unemployed, and, in many cases unemployable, among us.

Of late there has been a growing concern about the fact that for one reason or another the institution called the school, be it a public one or a private one, has not served in line with the increasing demand for education on the part of all people; it simply has not served adequately all the people. Now let me go back of that for just one moment and indicate that I in no sense lay this blame at the foot of the school. Educators have a certain responsibility for educational leadership, for the designing of programs that will meet the needs of people, all the people. We have been committed to this for a long, long time in America; at least in public education. The school has simple not served well, well enough, the great masses of the American people. Therefore, from this standpoint, we are suggesting that if you look at the entire package of federal legislation, backed up with the laws passed at the state level in support of the federal measures, and in turn if we look at the funds allocated at the local level combined with state funds to match the moneys appropriated at the federal, I think we have to say in looking at this entire package that the massive federal legislation represents a rather clear indictment of the total educational enterprise, public and private, from at least one standpoint.

Again, may I repeat, I am not charging the difficulty directly to the institution called the school because I have the strong feeling that over the years the American institution called the school is about what the American people would have it be - be that institution a private one or one that is publicly supported. Most educational institutions have governing boards which set policy which have to do with the allocation of funds for educational training purposes. Over the long haul Harvard is about what the American people who support it would have it be; so is the high school in this community. I have no idea about how effective the high school has been in this community in terms of serving the educational demand on the part of all the people as the educational demand increases. I am assuming it is a good school, but there must be problems of the type to which we referred a moment ago, that bring such groups as this together. Lay people, interested citizens of the various communities, and educators are meeting together more frequently and for longer hours, and siscussing and considering in greater depth educational problems and issues today then at any previous time.

At this stage an explanation should be made of the reasons for the increased demand for education in this country. There was a time of course when a relatively uneducated, unskilled person, could find employment, get it, and keep it. And he could make a living, in terms of the standard of the day. But more and more, through advancing technology and the application at the point where goods are manufactured and distributed, and services rendered, more and more advancing technology has left us with a situation, manpower-wise, that is somewhat paradoxical. We have on the one hand literally hundreds and hundreds of thousands of jobs going begging in this country - I have an idea you have some in this community, in this county - that are not filled for want of adequately prepared workers to handle these jobs successfully. Many, many jobs unfilled for this reason. Some of them, incidentally, are in the field of education; I happen to be chairman of the Personnel Committee of the College of Education. We are looking all the time for good people at the University of Illinois. All other institutions are in the same boat. There is the wildest scramble and competition you can imagine right now for college staff members. And we have always had a certain competitive situation as far as staffing the public schools is concerned, except for the critically serious years of the last great depression in this country. Jobs going begging for want of qualified workers on the one hand and literally millions of unemployed on the other.

Let me here express another caution. I would not for a moment assume that through adequate and complete total education you could eliminate entirely the two disturbing aspects of the manpower situation that make for public anxiety: that is jobs going begging on the one hand; workers out of work on the other. But you ought to reconcile, ought to be able through education, appropriate and proper education, to prepare people to fill all the jobs that are going begging, and thus take up some of the unemployment. Unemployment is not as serious, relatively speaking, in this country right now as it has been in the past years, but it is of enough concern to the American people that we are making an unprecendented effort to prepare people in such a way that if there are jobs, these people will be adequately prepared to man them, and solve some of the problems of unemployment then through education and training.

The current imbalance of the age distribution of the population is another factor increasing the demand for education. We have been experiencing somewhat of a population explosion in this country, for some time, which has altered the age distribution of the total population. May I just cite one fact that brings it out rather clearly and has implication not only for the school, but for the work situation as well? And that is this: we shall have approximately three people trying to enter college during the next five years of the sixties for every two who have been trying to enter during the last five years. This is almost a fifty percent increase in the number of people trying to go to college within this decade.

It is most pertinent at this time to make a reference to some of the groups that have not enjoyed the service of the institution called the school in the way that others have. This may be in part because the programs we have developed are not adequate to their needs. We have tended to operate the schools as though everybody were above average. As a result great masses of people of lower ability, with one kind of handicap or another: it may be social in nature, economic in nature, it may be intellectual in nature, a physical handicap - the people may be of a minority group and then also be of low native ability and have other disadvantages - thus these people in the main have dropped out of school very early. But now we find ourselves in a situation in which millions of people are not contributing to the economy, to the social life of the nation, and large numbers of them are, for all practical purposes, wards of the state in that they exist at all because of one kind of a relief program or another. The disadvantaged then, as a large sort of a nebulous group, hard to describe, different groups within the larger one, is one that has not been adequately served.

In terms of the development of occupationally-oriented programs, we are only beginning in this country to develop programs designed to prepare people for the upper mid-range, mid-level of employment that we call the technical or para-professional, sub-professional. We have long since developed to a very high level professional education in America and we are moving very, very rapidly to develop programs designed to prepare the technician. If one can generalize about this, it might be said that we need in our total labor force large numbers of sub-or semi-professional people as ancillary to the professional groups that serve us in one way or another: engineering, education, law - and certainly, in terms of large numbers, health and medical.

Thus you have come together for this two-day seminar, I take it, to consider some of these problems, raise questions about where we might go next in developing further a very fine educational system, and to ask how we may best and most effectively serve the groups that we are not now reaching through the schools, in order to have in time a better educated people generally speaking, and an adequate labor force in the country.

BAYONNE CURRICULUM RESEARCH PROJECT

Seminar, Bayonne High School Library

Speech of Dr. Lynn A. Emerson Thursday P.M., December 16, 1965

Dr. Adler, Ladies and Gentlemen:

In the short time that I want to take this afternoon, I would like to discuss four aspects of occupational education: some basic principles and concepts, technological change, changes in the labor force that lie ahead, and some occupational education needs for the coming years. I use the term "occupational education" to include all forms of education for work life.

first I would like to deal with some basic principles and concepts. I shall not elaborate on them but state them quickly and briefly. Among these principles are the following:

1) The most important resource of a nation is trained personnel. All of your physical plant can burn down and a factory will lose a lot less than if all of its personnel were destroyed in some catastrophe.

2) Money invested in appropriate and effective occupational education returns high dividends to society. Money put into good education is an investment and not an expense. If by appropriate training you keep a person from being added to the relief rolls you not only save the money needed to pay the relief, but he starts paying taxes.

3) Every person needs some form of occupational education, at whatever level he is capable of learning.

4) Inherent among the rights of every youth - male or female - is that of opportunity for undertaking pre-employment education suited to his needs. And these needs are different for different persons.

5) A person entering work life today must expect several major changes in his work during his lifetime.

6) The main goal of occupational education in the public schools is that of meeting the needs of persons, but this must be accomplished within the framework of meeting the needs of employers as well. You levy taxes in Bayonne to meet the needs of the youth and adults of the city, but you must also serve the needs of employers who provide the jobs.

7) The training and retraining needs of employed workers are just as important to society as are those of persons preparing to enter the labor market. Technological change is demanding change in the skills and abilities of workers, and provision for achieving such change is essential.

8) Large numbers of youth must get their initial occupational education in high school, but increasing numbers of new and changing occupations now require the maturity and the level of skills and understanding found in occupational education programs at the 13th and 14th grade levels.

9) Occupational education programs should be located at the age and grade levels most appropriate to the needs of persons and of employers. Programs formerly

conducted at the high school level are finding increasing favor at the community college level.

10) Occupational education is an integral part of education at every level, and needs to be in the main stream of education, closely affiliated with the other aspects of education that make up the total growth of the person.

11) A reasonable range of occupational curricular offerings can only be provided in relatively large schools.

These basic concepts apply to all types and levels of occupational education.

Out of 100 ninth-grade students across the nation today, some 45 will enter college after high school graduation. Of these, perhaps 20 will complete four years of college. Some of the remaining high school graduates will enter other post-high school educational institutions. Some will go directly to work after completing high school. Some of these students will not complete high school, and try to enter the labor market, which is increasingly unreceptive to the uneducated and the untrained. These persons vary greatly in their interests, their aptitudes, and their abilities. They live in all sections of the country. A youth living in a rural area often aspires to a job found in the city. A youth educated in Bayonne may find work in a distant state. All these youth should have opportunity for occupational education suited to their needs.

Technological change is exerting tremendous impact on work life. New jobs are emerging; old jobs are changing or disappearing. Youth entering work life today must face these changes and be ready for them. These occupational changes, in certain fields, are occurring at an unprecendented rate. It has been said that 90 percent of all the trained scientists who ever lived in the world are living today. Since 1950, just 15 years ago, we have seen changes that are far-reaching. In 1950 there were no computers in commercial use; today there are perhaps 25,000. They are being used for a rapidly widening range of activities - from making out paychecks to controlling satellites in orbit. We now have machine tools controlled by punched cards or tape; automated departments of factories; transistors applied to electronic communication or control equipment; greatly increased instrumentation; supersonic aircraft; atomic power; satellites in orbit. This morning some of you may have been watching TV when the Gemini astronauts were taken aboard the carrier Wasp, with the TV signals transmitted live by way of a communications satellite, a "first" in TV communication of this type. The intense beam of light produced in the laser is now used for drilling holes in diamonds, and this device is also used for tracking rockets for the first period after take-off. And these are only a few of the important changes of the past few years.

The "lead time" between the invention of an item and its actual use in commercial life is decreasing rapidly. The telephone has a "lead time" of some 56 years; the transistor, three years. Cybernation - defined as a combination of automation and computers - may have more bearing on our lives than anything that has happened during our lifetime, or perhaps the history of the nation. WHAT IS PAST IS PROLOGUE to what lies ahead.

Technological change exerts great pressure on occupational education, on the adaptation of training programs to meet these new conditions. It strikes at the root and fiber of all phases of occupational education, and demands that educators lift their sights to future needs as well as those of the present. Present programs need careful examination in the light of these changes. They may be quite out of phase with the needs of tomorrow.

The labor force of the years ahead will be faced with many changes. Many machine operators will be replaced by machine watchers. Maintenance technicians, and teams of maintenance technicians, will see considerable growth. Instrument maintenance and repair will become of increasing importance. We shall see large increases in the numbers and types of technicians, in the fields of business, agriculture, health and medicine, as well as in industry. Many jobs now considered as of skilled trades type will have their technical components greatly increased, and the jobs will become classified in the technician category. If we had the complement of technicians in industry that is recommended by some leaders - a ratio of three technicians to each engineer - it would change greatly the number of technicians needed in New Jersey for the years immediately ahead.

We shall need fewer farmers, but better trained ones. There will be fewer production workers per unit of product, but the total numbers will be large because of new plants Many more professional workers will be required. Skilled worker demand will probably continue at a reasonably high rate. Many new workers will be needed in the medical and health fields when Medicare becomes fully effective. A brief perusal of the want ads in the current Newark Evening News gives a picture of the many jobs now open for trained personnel, in a wide variety of categories.

Job entry qualifications in the years ahead will demand more education. The entry age into many occupations will be higher. Young persons seeking work will be at greater disadvantage than at present, especially those with less than high school education. Mobility of certain types of workers will rise, especially in such fields as technician occupations; and this mobility indicates need for considering the real labor market area which may be quite beyond the immediate vicinity where young people are trained. There will be more paid time for workers for education at all levels to keep them abreast of changing conditions. Presently many companies send middle management employees to institutions such as M.I.T. for special training institutes; this will probably be extended to other groups in the labor force. An increasing share of the GNP, the gross national product, will be devoted to services for the aged, for housing, medical care, and the like and some new jobs will be emerging in this field. What will happen after July 1, 1966 when Medicare goes into effect? My guess is that there will be many unfilled openings in the medical and health fields.

As changes in job requirements become more prevalent, workers will be desired who have flexibility - the ability to adapt to change. "Now days no one stays educated very long." If the schools are to prepare persons for working and living in an automated age there must be provision for initial entry into work life, for anticipating and meeting change in present jobs, and for retaining persons for entirely new jobs when the old ones disappear. The problem of preparing persons to anticipate and meet change is a very important one; and the task of preparing persons emotionally to anticipate and accept change may be difficult.

Occupational preemployment programs for youth are needed at the high school level and at the post-high school level. Much of the vocational education formerly provided in high schools is gradually but steadily moving into the post-high school institutions - area vocational schools, technical institutes, community colleges. Enrollment in occupational education programs in the community colleges is growing rapidly. During the year 1963-64 the overall enrollment in the junior colleges in the United States increased by 18 percent, but that in the occupational curricula showed a 38 percent increase. When I was principal of the Essex County Vocational School in Newark we used to take boys at the end of the 6th grade, give them two years of intensive training, and place them in apprenticeship or other jobs. No longer is that done. Today most apprentices are high school graduates before they start their apprenticeship.

In the years ahead high proportions of youth in the corresponding age bracket will attend high school. A higher proportion will enroll in basic or specialized curriculums, including cooperative programs. A higher proportion will graduate from high school, and more will go on to higher educational institutions. Occupational education will become increasingly accepted as being just as socially desirable as in the college preparatory curriculum. Today we are spending a high proportion of the total amount given over to secondary education for the 20 percent who will complete four years of college, and neglecting to a considerable extent the 80 percent who must find preparation for life work through other means than the four-year colleges. We need to provide well for those who will finish college. From that group will come most of our leaders, and those who will provide the ideas that will enable the development of new industries and new jobs. But we must not neglect to provide for those who will not finish college.

Overall programs in occupational education will begin with occupational information in the grades, exploratory and basic occupational preparatory programs in the lower grades of high school, with specialized programs in the upper high school years and the post high school. So far we have done little in the elementary school to get students thinking about the world of work. These students are capable of assimilating properly prepared information on occupational fields and their requirements, and in these formative years interests may be stimulated, culminating in the later years of full-time education, with proper guidance service, in appropriate choices of careers. The high school of tomorrow will include some vocational currciulums of specialized type, preparing youth for effective entrance into the labor market when they finish high school. More generally, perhaps, in the years ahead the high school curriculums will be made up of "tracks" or core curriculums leading to specific occupational education in post-high school institutions, and to the specialized training in the 12th grade. Some of this specialized preparation in the high school will be offered within the comprehensive high school building. Some of it will come through skill centers where the student may spend half the school day during the senior year. Some of it will come through cooperative programs where the youth spends half of the school day at paid work experience and the other half in the classrooms of the school. Some of the occupational preparation at the high school level will be done in separate vocational schools, where the youth may be enrolled full time for from one to three years. Changing occupational life is bringing about increased need for placing the occupational preparation in the main stream of education, where greater breadth of education is available, and where occupational choice may not be required at so early a stage as is needed for enrollment in a separate vocational school at the end of the 9th grade, as is frequently the case at present.

In past years the vocational education in high school preparing for entrance into the skilled crafts has largely been in the form of specific curriculums for each craft, beginning as early as the 9th or 10th year and utilizing from one-half to three-quarters of the school day for the shop and related instruction. In the high school of tomorrow it is likely that we shall see comparatively little of the specific vocational education for single crafts, in favor of broad basic programs built upon careful analysis of the common elements underlying several crafts in the same broad field. An example is the metal trades, in which such tools as the twist drill is common to all. The basic program for the metal trades field might well include shop work in the basic processes using the tools common to several crafts, basic metallurgy, basic study of materials, mechanical drawing, and the like. The basic course would be followed by a specific course for a specific craft, given in the last year of high school or in the post-high school institution.

The high school track leading to technical education on the post-high level would include basic technical material in the broad field toward which the student desires to go, plus the basic mathematics, science and other subject matter needed in order that the student will be able to comprehend the instruction in the technical field on the post-high school level. Taken as a whole, the high school of tomorrow may well be larger, broader in the scope of its offerings, well supplied with guidance counselors who are thoroughly acquainted with the world of work and its requirements, with a considerable variety of curriculums designed as basic foundations for later specialized occupational education, and with specialized vocational training for those who expect to go to work immediately upon graduation from high school, or who may leave high school before graduation. The occupational programs will encompass all the important fields - business, industry, medical and health, agriculture, and the like.

Increased attention will need to be given in the years ahead to the occupational education needs of girls and women. In most high schools the only thing that has been available to girls, in the field of occupational education, has been preparation for office occupations. Women are entering occupational life in a widening scope of work, and the occupational education programs in the schools of tomorrow need to take this into account.

The total program of the educational institution should be concerned as much with course offerings for employed workers as for those preparing to enter the world of work. This will involve the high school to some extent, but will pertain most directly to the post-high school institutions such as the community college. In the years ahead we shall need increased comprehensiveness in all our educational programs, with somewhat higher proportions of appropriate general education in the occupational curriculums, and a greater range of such curriculums in each school. As indicated earlier, this will require large institutions. Comprehensiveness in curriculum offerings requires breadth within institutions, with indications that in the years ahead much of the occupational educational education will be in comprehensive institutions, with increasing proportions of it in community colleges. Throughout the country it is interesting to note the changes taking place toward comprehensive institutions. In state after state, schools originally established as area vocational schools for youth of high school age change their programs to serve post-high school youth, and then add transfer programs and a wider range of occupational education curriculums to make them truly comprehensive. Increasing interest in the development of community colleges, and increased state and federal support for such programs are aiding this development.

New Jersey is taking significant strides toward the development of community colleges and of comprehensive high school programs. The economic future of the State will be influenced materially by these developments. The City of Bayonne has its place in this important program. Education in a democracy grows out of the desires and activities of people. The kind of schools you will have tomorrow in Bayonne, and the extent to which they will meet the true occupational needs of all the people of your area, are in your hands.

BAYONNE CURRICULUM RESEARCH PROJECT

Conference-Seminar Dinner

Bayonne High School

Speech of Dr. Robert M. Worthington - Thursday, December 16, 1965

I want to commend the Board of Education of Bayonne, Dr. Rall and his staff, and all the people who have participated in making this curriculum project a reality. I thought, too, that we as a group certainly ought to commend these young people who are students in the Home Economics program, and I understand many of them are working on the vocational work study program,for the fine job they did in serving this meal, and certainly Mr. Van Sciver and his students for the outstanding professional job of printing that they did. I wish all of you would join me in giving them a hand.

There are a few thoughts written down here which I should like to share with you, and I am only going to take ten or fifteen minutes to do this. I should like to speak briefly about New Directions for a Total Program of Vocational Education in the State of New Jersey.

The basic objective of public education in the United States is the preparation of the individual to meet the problems of life. The inclusion of any subject in the curriculum offerings in our schools is justified to the degree that it assists in achieving this goal. But the problems of life should be viewed broadly if the educational program is to meet the total needs of those who are to benefit from it. Life, not only involves living, but earning that living and the total program of education must concern itself with each of these areas. Traditionally, New Jersey has done well by its citizens with regard to the former, and this fact is widely known and appreciated. As a whole, however, as reported in 1964 by Commissioner Raubinger's Committee to study the needs of vocational education in New Jersey, our state has fallen far short of its responsibility for preparing its people for the problems involved in earning a living. This study of Commissioner Raubinger's committee bore out and reiterated what the panel of consultants appointed by the late President Kennedy said existed in this nation: that we were not meeting the needs of those students who were not going on to college.

Many of the previous speakers mentioned that here in Bayonne probably 80% of the young people who are now in school in this community will not graduate from college. Therefore, this is of great concern to us. It is encouraging to see the great interest in occupational education throughout the nation, and certainly in New Jersey and communities like Bayonne, in trying to meet the needs of this 80% of the students. Commissioner Raubinger's report pointed out in October, 1964 that the State of New Jersey had 50,000 or more young people between the ages of 16 and 21 who were neither in school nor working. At the same time this report came out the Department of Labor said there were 70,000 jobs unfilled in the state because of the lack of skilled people to fill them.

American parents expect their children in school to learn how to make a living, preferably a better living than the parents have managed to provide. And this, of course, is the role of vocational education: to provide education and training for entry into and progress in the world of work.

Today vocational education has increased responsibilities. In addition to providing occupational skills for youth attending high school, the Vocational Education Act of 1963, which is now being implemented through our approved state plan, provides that vocational education be extended to persons who have completed or left high school, the persons in the albor market, the persons who have academic, socio-economic, or other handicaps. Vocational education is broadly defined in this new act. It includes ~~may~~ vocational training or retraining in incidental field and laboratory work; it includes vocational guidance, and vocational guidance is now specifically spelled out as an important part of vocational education in the new act. Instruction which in itself is not vocational education, but may be needed to correct educational deficiencies or handicaps that prevent students from benefiting from vocational education, is included in this new act. Such instruction should be provided in courses which are an integral part of the vocational education program in which the students are enrolled.

This new act, which we are now administering in New Jersey, broadens and expands vocational education, and permits vocational educators to provide services that heretofore were not possible under the older acts such as Smith-Hughes, George-Barden and others that Dr. Karnes discussed this afternoon. Traditionally vocational education has been primarily that part of the student's formal educational experience that has provided him with the skills and related knowledge necessary to enter upon and make progress in occupations. Today the forces have changed and are altering long-held American attitudes toward the utilization and conservation of its human resources. We are beginning to understand the direct connection between the education of every citizen and our strength as individuals and as a society. We have begun to see more clearly the need for a planned relationship betweenmmanpower needs and educational programs. With this as background we can now speculate and theorize for the future of vocational education in the nation and in New Jersey, and we can now begin to address ourselves to determining the long-range direction which vocational education must take in our state and the direction that vocational education should and will take in the Bayonne school system.

Many people are asking and debating many questions about vocational education today, and if you read the current issue of the *NEA Journal* you noted a series of three articles discussing the level at which vocational education should be offered. The question is being debated a great deal: "How soon should the preparation of youth begin for vocational education?" I submit that we need to acquaint the children with the world of work at an early age. The total program of vocational education should be organized and coordinated on a contimum from the kindergarten through the junior high school, the senior high school, and on through adult school. In some cases college might be included too.

A pre-requisite for sound vocational education is a broad base of exploratory experience. Prior to the time the child selects a particular area of vocational endaavor he should explore a broad range of activity. These broad exploratory experiences enable him to identify his own interests, talents, and abilities. In other words, a child realizes a knowledge of himself. He has had first-hand experiences with the way his capabilities and his limitations permit him to deal with the physical environment. This kind of self-knowledge is invaluable in making a satisfactory selection in one's life work. This knowledge or discovery of self takes place most effectively when there is opportunity for the child to personally confront, engage in, and have first-hand experience in the nature of many kinds of work.

The elementary school environment can contribute much toward increasing the variety and nature of experiences children have. As an example, new and expanded programs of industrial arts education can do much to enrich the elementary and secondary school curriculum. This can also apply to Bayonne's elementary schools. If you help to start developing an industrial arts program that is geared toward the man-made environment, to the world of work for these younger children, you would have made a great step forward. Industrial arts activities introduced to the child in that kindergarten level, extended through the middle grades, can expand the spectrum of experiences and can greatly increase the child's opportunity for explorational discovery. Since these activities include working with a wide variety of materials, the activities enhance the child's opportunity to develop the knowledge and techniques necessary for dealing with these materials in a competent and effective way. The inclusion of industrial arts experiences permits the man-made world to become real and meaningful for youngsters, especially those who have seen only a small portion of it because of their limited environment. They need the creative experience of controlling their environment, to meet their own needs, and release their energies in worthwhile tasks. These experiences can help motivate the learner to read, to compute, and to create. The feeling for and the sense of preservation toward tools, materials, and machines also grow in our younger student. Thus he can better understand his technological enrironment. To illustrate this point, Jerome S. Bruner, the noted Harvard psychologist, in an anthology on contemporary education reports, and I quote: "It is necessary for the beginning child to have certain kinds of manipulative and almost intuitive geometric skills." And he adds, and he is quoting from studies he has made of children on the borders of the Sahara Desert in Africa, he says:

> "We are struck at the difference in the behavior of American children and the children in the African bush, who do not have toys of mechanical or geometrical constraint to play with. We take it for granted that our children in America can deal with geometrical forms - put them together and take them apart. Yet, the fact of the matter is that it should not be taken for granted. The experience of manipulating materials gives our children a stock of images and geometric transformations that permit them to work geometrically and mechanically in the way that African children cannot. These elementary forms of intellectual skills are essential."

How soon should preparation begin for vocational educatioh? Since a wide variety of experience is a part of the preparation for occupational choice in education, it is obvious that this part of the preparation could and should begin as early as the kindergarten level.

Another question that is being debated a great deal these days in educational circles is, "What should we teach the 60-80% who will not graduate from college?" This percentage, of course, varies within New Jersey. We know that statewide it averages about 80% of those in elementary school who will not graduate. I suggested that for these young people we re-orient our thinking and redefine our questions and we ask, "What should we teach the education-bound and the employment-bound? Both groups must be prepared with a definite objective in mind, and the curriculum for each group might well be determined by general knowledge of what the student wants to become, and not whether he is college-bound or non-college-bound. Obviously, a strong program of vocational guidance will be necessary to determine early the student's objective and to suggest the appropriate curriculum for the individual student. Such a program is needed badly in Bayonne if the vocational programs now and in the future are to function.

As educators, all of us should be deeply involved in the innovation of ideas and programs that will accomplish our purposes and meet our societal repponsibilities. Too often emergency situations, rather than a systematic development of programs, tend to set the stage for innovations in the public schools. The U.S. Office of Education finance study reports, and I quote: "Innovations often result from those crisis conditions that present problems needing new and dramatic solutions." Typical of the conditions, the report goes on to say, are radical population growth, major changes in composition, structure, or economy of the community, and pressures of well-organized groups. I will point out that not once did this particular report mention the needs of students as a factor in bringing about curriculum changes. I submit that we are remiss that we are not concerned with the individual, his avocational, vocational and societal needs.

Certainly the selection of content and instructional method is one of the most complex and controversial takks facing education today. Curriculum development must be based on the dominant elements of our contemporary culture. Psychological and social change, these are the dominant elements. Vocational curriculums, or those curriculums that prepare the employment bound for entry level occupations, should be based on realistic appraisal of current and future job needs, and should include those subjects that are necessary to provide the student with immediately salable skills, while at the same time providing adequate general education for cultural and social background, and for future education. Obviously, our general education subjects, such as the social sciences, need to be re-oriented in many cases. Professor Donald Super of Columbia University, incidentally a New Jersey resident and a member of the Montclair Board of Education, says that the structure and function of the social sciences in our regular schools - the structures and functions of occupations, of industry and of organizations, the economics of obsolence, of automation - all of these things need to be discussed in our social sciences. He also says that these things should be discussed in our social science classes: the occupational trends, and the way of recognizing occupational trends, the functioning of the labor market, the budgeting for seasonal and cyclical employment, the use of Social Security, public assistance and retraining programs, the way of life associated with different industries, occupations, and regions, and patterns of careers. Would it not be wonderful if all of our social studies teachers could provide this kind of background for the students, whether they are going into the world of work, or whether they are going to college? Vocational programs should recognize the realities of the job market to assure jobs for graduates and to satisfy a requirement of other vocational education acts which do state that specifically this training, granted under these acts, should be for recognized occupations. In other words, education and training should prepare the students for work.

Fred M. Hechinger, the Education Editor of the New York Times, said recently in an article in the Saturday Review, when he was talking about salable skills, that developing salable skills in our students in vocational education is not enough. We need to teach children and youth that speech is a precious gift, a sacred and essential art and the instrument that enables us to say what we mean to say. He went on also to talk about the other important aspects that we need to re-emphasize in vocational education just in addition to skill development.

Commissioner Frederick M. Raubinger's committee to study the needs of vocational education in New Jersey recommended that both county and local boards of education accept the responsibility for providing whatever vocational education is needed to serve the demands for skilled and semi-skilled workers of all kinds. Additionally it was the consensus of this committee that present vocational education in New Jersey be extended to encourage more programs in the various vocational-technical areas as schools expand, to provide more programs for girls in industrial and service occupations, to expand service trades training where demands are not being met, to expand cooperative work-study programs in all secondary schools, to up-date present industrial arts and general home economics courses to include occupational outcomes, to add new programs to those already in operation ona basis of surveyed employment needs of business and industry, to initiate a broad scale of cooperative work-study programs for the small high school particularly, and diversified occupations, office occupations, distributive education, cooperative trade and industrial, agricultural and horticultural occupations. The committee also recommended that local districts that do not provide opportunities for public vocational education should support the attendance of students by tuition payment to any city, county, or regional public school which has a vocational program and which will permit these students to attend. These recommendations were made to meet the needs of students now in New Jersey schools and the one and one-half million who will be enrolled in our New Jersey schools in 1970.

At the state level we are urging that school administrators across the state, and boards of education as well, work closely with business and industrial advisory groups in the designing and developing of programs. I think, Dr. Rall, that the turnout you have here tonight for your advisory committee certainly indicates that you are doing this at this level. I also want to point out that we at the state level now have a state-wide advisory council of high-level business and industrial leaders. And I believe one of them is here tonight, Bob Pecka, who is the Assistant Superintendent for Industrial Relations at the Western Electric plant right here in Hudson County. This State Vocational Advisory Council meets at its own request with us at the state level once every month to discuss what we can do at the state level, and how they as industrial and business leaders can help us. We think this is an extremely important thing and we congratulate you, Dr. Rall, for doing it here so effectively. Too often the educational practitioner feels that he alone is the fountainhead of all ideas of education. Imaginative and cooperative thinking is a must today if we are to meet our present educational needs. This project, this Bayonne Curriculum Development Project, is based on the uses of suggestions, on the consensus of many ideas, of many people; it is based on the Judgmental Procedure of Curriculum Development.

At the state level we have done a great deal of advanced planning to guide the way of the field of vocational education for the future. It is our responsibility of course to develop and try out new ideas in cooperation with the local schools, county schools, colleges and universities, so we may determine the direction vocational education should take in New Jersey. To do this, we have included in our plan some of the following things we are trying to build up across the state: to further develop our Dropout Retrieval Program we have now established five programs in the state for skill centers to help retrieve this 50,000 or more people who are either dropouts or who have finished high school and who have no salable skill. We understand also that a skill center for the Jersey City area will soon be annexed. We already have one in Newark which is serving the Greater Newark Area with job training for out-of-school youth, unemployed, and under-employed adults. We also want to develop a program in home economics that will provide potential female dropouts with combined occupational and home-making skills. Certainly Dr. Crabtree and her staff in our state office are doing all they can on this, and we hope that Dr. Simpson will have some good suggestions for us while she is here from Illinois. It is our hope also to provide a retraining program for such people as unemployed stenographers and others who are now freed from fetters of family obligation and are now available for full-time work. We hope to further develop programs in home-making related to training for girls in public housing units. Under the Vocational Education Act of 1963 home economics should now be expanded at the occupational level to adults in housing developments and through welfare agencies. We hope to provide retraining programs in new occupational areas, in retraining of craftsmen whose present crafts and skills are becoming obsolescent as a result of technological change in our society, and to extend, expand and upgrade present trade extension programs for persons already employed in industry.

We hope to find ways to work cooperatively and effectively with industry and business in joint efforts to upgrade the technological understandings and experience of instructors, to identify training needs, and to orient our counselors to the world of work. We hope to improve and expand our vocational teacher education programs to provide more realistic educational and training programs for pre-service and in-service teachers. Recently we held a meeting of all the state college presidents, the deans of the universities, and the president of one of the private colleges that emphasizes training in business education, at the Western Electric plant in Kearny, where we met for a full day to talk with these top administrators about the great need for increased numbersoof vocational teachers. And I was quite pleased to find how many of the college people would like to help us out on the steering committee expanding this program. Everyone of the institutions said they wanted to do it, and some of them have not previously been involved in vocational teacher training. We know this is one of our real problems - to find enough of the highly competent teachers, the kind of teachers you have in Bayonne, to do the job we need to do.

Another one of our aims is to find ways of applying the lessons we are learning through research to programs and operations. We are especially interested in attitudinal professional studies which may be applied to develop more effective and more cooperative workers. We hope to attack the problem of providing persons with a cluster of occupational skills, through team teaching and cooperative efforts of all vocational educators. We should like to integrate values other than just middle-class values into our vocational educational program. We hope to study means for orienting and re-orienting groups of people: parents, counselors, and school administrators to the career possibilities beyond the entry level of occupations learned in the vocational classes. We hope to consider ways of utilizing retired personnel in our instructional program. It certainly is wonderful for us to have a distinguished professor emeritus on our panel today, Dr. Lynn Emerson from Cornell University. These are the kinds of people who still have a lot to offer us and we need to be utilizing them. We want to consider techniques and wider use of community resources in our total educational program.

We want also, last but not least, to disseminate the results of vocational education research to the practitioners of vocational education. I think that is the real strength of this project which Dr. Lockette has designed, and which we have been able to get funded through Sidney High's research section of the U.S. Office of Education. The real strength of this project is that you who are teachers here are working on the project yourself; you are participating in it. And, actually, we are getting immediate dissemination of the results.

At first we want to experiment with and develop flexible educational programs to meet the needs of all the youth and all the people in New Jersey. Now these of course are big plans and they require a lot of initiative, imagination, and certainly a great deal of leadership at all levels. They can be implemented for the benefit of all if the leadership, know-how, and financing are combined to do the job. I want to re-emphasize what Commissioner Raubinger said at the New Jersey Education Association convention in November in Atlantic City. He talked about all the various federal acts and particularly the Elementary and Secondary Act of 1965. He said, regardless of how much money we get, or how much the administrators or the supervisors, or the teacher educators talk about improvement, that the key people are the teachers, and this I want to re-emphasize: that the teacher is the most important link in the chain. We must provide the teacher with the learning environment, the equipment, the facilities, the time to do thinking and research. He is the key person, he is the one we really have to help. And I am very pleased to note that you have been recognizing this in Bayonne by doing many things.

I certainly commend the Board of Education for moving ahead and renovating your shops. This is my first visit today to your shops in about a year; and really, I was very pleasantly surprised. They really are beginning to shape up. I hope you will continue this process and get all of your shops in the condition of some of those I saw this afternoon. I want to say too that we at the State Department are certainly grateful for the opportunity you have given for our staff to work with you because we will only be effective at the state level when we have the opportunity to work cooperatively with you at the grass roots level where the real problems are.

And also we want to assure you that we at the state level are looking toward giving you further support and further help in any way that we can. We hope that there will be a possibility for further financial help. However, we are not sure of this. We hope that all of you will urge your legislators to support the budget request which we submitted to the Budget Bureau. We have asked the State Budget Bureau this year to provide us 4.9 million dollars to match the 4.9 million available under the Vocational Act of 1963. Last year and the year before last were the first time our State Legislature appropriated 1 million dollars to expand vocational education. It was through this fund that we were able to make a grant to Bayonne to start refurbishing your shops. Now if we are able to get the 4.9 million we are asking for, we think we can continue this kind of support for local districts who need it. In addition, we wish to expand our technical education. Mr. Frigiola and his staff have requested a doubling of technical education funds at the state level to $200,000 to start new technical programs. Weaare also adking for an additional $200,000 of state funds to help expand vocational teacher education. If these things are going to be approved by the Budget Bureau and the Legislature, we certainly need all the help we can get from you, the citizens of the State of New Jersey, to sell these ideas. We know that many of our professional organizations have been writing in and encouraging these things.

I want to commend you for some of the new ideas in curriculum that are already developing, based on the thinking you have been giving to vocational education. I understand that you have under consideration now a comprehensive horticultural arts program: in floriculture, greenhouse work, landscaping, tree work, part recreation maintenance. We also understand that you are investigating the data-processing field and attempting to work out a data-processing center to serve as an integrated service for all departments in this school. In addition we have learned that you are working on a newly conceived program to train for skilled workers in this great seaport which you border on: skilled workers in the distribution field, terminal warehouse men, fork-lift operators, and the many kinds of people that are needed in such a port as Port Newark, one of the most complex and most important transportation centers in this nation.

And, last but not least, Dr. Rall, I again want to commend you and your staff for your support, and also Dr. Rutherford Lockette and the staff of Trenton State College for the support they have given in making this a research project that we are sure is going to be successful. Thank you very much.

BAYONNE CURRICULUM RESEARCH PROJECT

Seminar, Bayonne High School Library

Speech of Dr. E. Walton Jones - Friday, December 17, 1965

Economic Research and Vocational Education

The entire educational system can be viewed in the framework of economics as a processing industry. People are the raw products that are fed into the educational factor to be transformed into finished products demanded by industry.

In order for the educational system to obtain the appropriate supply of raw materials to develop a finished product that is demanded by industry, it must be provided with certain basic data that fall within the realm of the discipline of economics. These basic data include information regarding (1) the supply of labor which involved projecting population and labor force, its characteristics in terms of composition and mobility and the location of the supply of labor, (2) the demand for workers in terms of numbers, skills, location and the rate of change in the job market. The discipline of economics can also contribute significantly to an efficient education system by continuing research to determine skill groupings that might make a manageable instructional unit that would increase the flexibility of the worker. I think economic research could contribute significantly to educational planning in terms of organization, size and location of physical educational facilities through the application of economic-engineering and minimum-cost location models. We have developed elaborate economic models and applied them to determine where production of economic products should take place to minimize social costs and to determine optimum size firms based upon density of raw product and location of demand. In the past, we have not applied these quantitative models to educational and other public facilities. We can, however, and I think we will as we get more money appropriated to research in education and as we come to appreciate the complementarity of all social science disciplines.

Education and Adjustment in Economic Growth

In the past few years considerable economic research has been conducted that has specific implications for vocational education. A large part of the research has been oriented towards the problems of adjustment to economic growth. Education plays a big role in the adjustment process since a shift in the work force is at the heart of the process. If we look at the basic process of growth in the simplest of terms, we can compare the economy to a giant machine. Resources - human, natural and man-made - are fed into it and finished consumer goods are produced. As long as the quantity and quality of these resources do not change and the demand for consumer goods remains the same, we have no economic growth. It is evident, however, that the stationary state cannot exist for more than a very short time. The population increases, natural resources are discovered or developed, capital is added and the type of goods demanded changes. Technology is probably the most potent force affecting the entire system.

The basic direction of resource shifts that must take place as growth occurs in the economy are predictable. This is true because to a large extent we have in the past and will continue to chart our course of development. If we look back to the early days of the country, we were an agricultural nation. Most undeveloped countries, if not all, are. It was logical that we put emphasis first on the development of our agricultural resources. At the time of the Revolution, 90 percent of the American people lived on farms. At the present time, less than 7 percent live on farms.

The point is that the process of development requires that we develop our basic industries such as agriculture and mining first and manufacturing and service industries in time. You will note that increasing the productivity of agriculture did not in itself result in growth but made it possible for us to grow by shifting resources into other industries. Thus, a basic direction of growth is a movement of workers among industries.

Industries are generally associated with geographic regions and consequently growth requires a shift of worker between regions. This shift of workers or people among geographic regions is another basic direction of growth. The population of this country has been shifting rapidly from rural to urban areas. More than half of the states in the United States lost white population in the 1950's due to migration. A considerable portion of the migration is a movement out of the agrarian south to the industrial centers in the north and the west.

Since the basic origin of growth is technology, certainly another fundamental direction of growth is a movement from low skilled to high skilled jobs. This vertical growth or migration is evidenced by the shift in proportion of the total work force to the higher skilled job classes. Growth in unskilled jobs is not expected to increase at all in the next five years. The number of jobs in the farm economy is expected to actually decline by about 18 percent between 1960 and 1970.

The implication of this basic growth process for education is clear. Considerably higher rates of unemployment exist among workers with low levels of education and training as compared with those with more training. In 1962, workers with less than 5 years of formal schooling had an unemployment rate approaching 10 percent. The unemployment rate for college graduates was little more than 1 percent. The demand for more training is further evidenced by research showing high returns and investments in education.

Another major force that has been acting on the United States economy in this decade particularly is that of a rapidly increasing labor force as a result of war babies. This along with increased life expectancy has resulted in a change in the age composition of the total labor force. We have and expect to continue to have more younger and older workers with fewer in the middle age groups.

The point is that we do know the basic directions of change.

Specific Implications of Cahnges in the Labor Force and the Economy for Vocational Education

If we reflect on the model that I described in the beginning of the discussion where the educational system represents the element that processes the raw labor inputs into marketable products, we might see more clearly the implication of economic research for decision makers within the educational plant. First, let's look at what we know about the supply of labor. We know (1) that the total labor force will increase by nearly 20 percent between 1960 and 1970. The male labor force will increase by about 15 percent while females will increase more than 25 percent. Workers in age groups 14-24 will increase nearly

50 percent - older workers will also increase, but those in the age group 35-44 will actually decline.

Certainly we also know that the raw product going into the educational plant will be a heterogamous mixture from different cultural and ethnic groups. They will not all be youngsters, but older workers whose skills have become obsolete as a result of automation. They are from families with different income levels and cultural settings.

These are just a few characteristics of the labor force of the future that have very definite implications for the scope and design of the educational plant.

Let's look at the demand for workers in the future and see what implications this might have. The trend as stated before has been for more jobs in service producing industries relative to goods producing industries. For the first time in our history, the proportion in service producing industries exceeds that of goods producing industries. This trend will continue. In line with this, the proportion of white collar jobs has been increasing relative to blue collar jobs.

The implications for education are clear if we look at the general level of schooling required for the various occupational classes. Certainly, we must not overlook the fact that this shift in industrial and occupational classes demands a mobile work force. Students must be taught that change is inherent in the free enterprise economy and must be built in our work perspective. We must develop flexibility in workers of the future that involves attitude development as well as the teaching of skills.

Summary

In summary, I might say that economic research indicates that the problems of adjusting to a technological and manpower revolution are related very closely to the mobility of people - how fast they can move between regions and between jobs and make the necessary adjustments. Certainly in this context, education is the major lubricant that can help make these adjustments. I think the educational establishment in the country has never been faced with a greater challenge.

Professor Clinton Robinson stated in Goals for Americans that the promise of America is to provide an opportunity for each individual to develop to the limits of his capacity. In planning your curriculum and your school, I think you should ask yourselves - will our school provide this kind of opportunity for development for every child in Bayonne?

BAYONNE CURRICULUM RESEARCH PROJECT

Seminar, Bayonne High School Library

Speech of Dr. Elizabeth Jane Simpson - Friday, December 17, 1965

PROJECTIONS IN HOME ECONOMICS EDUCATION

What will the home economics education program at the secondary level be like in 10 years or so? Changes are taking place rapidly and to venture a guess might be to place oneself in a vulnerable position. Nevertheless, planning for the foreseeable future requires thinking ahead to what may be - and, more particularly, to what may be desirable. Therefore, let us do some crystal-ball gazing.

Program Purposes. What purposes will be served by the home economics program in the secondary school? I doubt anyone would question that preparation for homemaking and family life will remain a major one. This is our traditional purpose and surely a need for continued and expanded education in this important area can be seen in conditions such as the complex and demanding roles of family members today, the high divorce rate, the establishment of families in large numbers and at younger ages, increased mobility of individuals and families, the high rates of juvenile delinquency and mental illness, and the lengthening life span.

It seems certain that there will be a rapid development in the employment education aspect of home economics. Apart from the availability of funds, support for such development is provided by considerations such as these:

1. A large number of women are employed outside the home and it seems likely that this situation will continue.

2. There is a sharply dropping proportion of jobs that can be done by unskilled workers. Home economics has potential for contributing to preparation for occupations.

3. A high proportion of young people drop out of school and there is strong evidence that they are much more likely to stay if the school offers a program to prepare them for employment.

4. There has been an increase in service occupations, both in private households and outside the home, and many of these service occupations have a relationship to home economics.

5. Of the nearly 12 million boys and girls in high school today, only 1.8 million are receiving any kind of vocational education. Yet, out of every ten 5th graders today, only six will finish high school and only two will go on through college.[1]

It is apparent that education for employment at the secondary level is an imperative. Home economics has a contribution to make in preparing students for employment. Herein lies challenge and opportunity. There now seems no room for doubt that a second major purpose of home economics at the secondary level is, and will continue to be, education for employment in occupations utilizing home economics knowledge and skills.

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[1] Pilot Training Programs in Home Economics, American Vocational Association, Washington, D.C., p. 6.

In the first issue of the Illinois Teacher of Home Economics for 1964-65, Catherine Dennis stated[2] a third purpose of home economics education at the secondary level: to motivate and recruit college-bound students for professional careers in the field of home economics. Although the field has a long way to go in respect to this purpose, surely all will agree that it is an important objective.

The next 10 years may be expected to bring some exciting developments with respect to this purpose. Needed are home economics teachers especially prepared to work with the academically talented student; courses or individual study programs geared to their special needs and abilities; work experiences at the high school level with professional preparation the ultimate student goal; facilities, such as study carrels and ability-development carrels, to meet the special requirements of the talented student pursuing studies in depth.

Although each of these three major purposes involves unique knowledge and abilities, it seems certain that there are abilities and knowledge common to all three. Identification of the unique knowledge and abilities for each aspect of the program, and the commonalities, would seem to be an area of research with important implications for curriculum-building.

Figure 1 suggests the nature of the relationships among the three major purposes of home economics education at the secondary level.

To summarize our own discussion of purposes to this point, it would seem reasonable to expect that the next 10 years will bring an expanded program in home and family life education; tremendous development in the area of employment education in home economics; new provisions for preprofessional preparation for academically talented students; research that will serve to identify unique and common knowledge and abilities related to the three major aspects of the program.

Identification of the commonalities should make it possible to develop a total program of home economics integrated in many ways - rather than the schismatic one that could develop if we see education for homemaking and education for employment as separate programs having no relationship to each other.

Program Content. Now that we have considered program purposes, our next question in looking to the future might be: What should be the major areas of content related to each? Time does not permit a thorough discussion of the bases for selection of content. But the following questions provide some guidance in the process of seeking answers: What is going on in our nation? In the world? What are today's families like? What are the needs of today's young people? What are the needs of the local community? What is the subject-matter structure of the field? What is predicted for the future in relation to each of these questions?

With such considerations in mind, appropriate areas of content for the homemaking aspect of the program would appear to be:

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[2] Dennis, Catherine, "Re-Examination of the Purposes of Home Economics at the Secondary Level," Illinois Teacher of Home Economics, Vol. VIII, No. 1, p. 7.

1. Meaning of "home" and "family."
2. The family as a social institution.
3. Relationship of family to other social institutions.
4. Cultural influences on family life.
5. Responsibilities of the family.
6. Developmental stages in family life.
7. Parenthood.
8. Management of the home, including family finances.
9. Housing the family and furnishing the home.
10. Food for the family.
11. Clothing for the family.
12. Care of the sick and aging in the family.
13. Continuing education in family life.

Working on a number of curriculum development projects during the past 10 years, the speaker has seen various approaches to the task. In considering the question of program emphases, groups have looked at social conditions and needs, family life in America, roles of women in our culture, "teen culture," and student needs and concerns. But regardless of the approach, the conclusion is inevitably the same: There is a need for increased emphasis on relationships and management in the homemaking aspect of the program - and, concomitantly, less emphasis on sewing and food preparation skills.

Perhaps the time has come when one dares suggest that garment construction has no place in the home economics curriculum at the secondary level, except as it is related to the employment education aspect of the program. And, here, the construction skills would be taught for their special relevance to employment situations.

The notion of increased emphasis on relationships and management and less on skills in the homemaking aspect of the program is certainly not new. The next 10 years will surely see this idea become operative in home economics programs. This must happen if home economics is to serve families as they really are.

Real-life families need help with such problems as getting along together, their interrelationships with other social institutions and agencies, the rearing and guidance of children, decision-making, use of resources, and buying and making wise use of goods. Provision of adequate instruction in these important areas does not leave time for development of all of the homemaking skills. In particular, it does not leave time for development of those skills that are taught effectively outside the regular school curriculum.

I wish to submit that garment construction is one of those skills, especially considering the fact that there are many clothing construction classes offered at adult levels.

For the employment-education aspect of the program, appropriate areas of emphasis for the present and foreseeable future would seem to be:

1. Home economics-related occupations requiring varying levels of training or education.
2. Personal traits and habits that make for employability.
3. Knowledge and skills needed for certain occupations related to:

    a. Child care and guidance

b. Food and nutrition.
c. Home management, and care of the home.
d. Home furnishings.
e. Clothing and textiles.
f. Care of the sick and aging.

Content for the pre-professional aspect of the program would include:

1. Professional opportunities in home economics.
2. Meaning of "profession," and "professional commitment."
3. Independent studies in depth - problems related to some phase of home economics.

"Roles of Woman" Core. Although this may be highly controversial, the speaker would like to suggest that the area of commonality shown in Figure 1 has a "core" and that this core is "roles of women." We hear such statements as, "We have been preparing women for half of the dual role. Now, with the employment education emphasis, we are preparing her for the other half."

Our concern for the roles of women and the implications for the home economics curriculum is well accepted. It is most obvious from the recent abundance of articles on the subject that there is a great deal of confusion about the roles of women and that girls, and women, need to develop an understanding of their many possible roles - homemaker, mother, professional worker, or skilled service worker. Single person might also be one.

Whether or not she marries, whether or not she works outside the home, she is going to grow up to be a woman. True, home economics has done something for the development of the woman as a woman. What is suggested is that the field could do much more. Much of the content of the field could be applied to the task of helping the girl become a mature woman with a clear sense of her own identity. Basic to this conclusion is the belief that women need some special education for womanhood.

What would be the content of the "roles of woman" core? The following might seem reasonable:

1. Roles of the girl; roles of the mature woman.
2. Concept of maturity - what it means to be a mature woman.
3. Understanding self and others.
4. Personal development - evaluation of one's own development, goals to work toward, resources.
5. Relationships with others - basic human needs, communication (verbal and non-verbal), sensitivity to others' needs.
6. Looking toward marriage and/or job or career.
7. Understanding and caring for children.
8. Nutrition and food selection.
9. Personal clothing - art aspects, consumer buying.
10. A place to live.
11. Management of personal resources.
12. Use of leisure.
13. Personal standards and values.
14. Continuing education in womanhood.

(More)

PROJECTIONS IN HOME ECONOMICS EDUCATION

ELIZABETH JANE SIMPSON
Professor, Home Economics Education
University of Illinois

FIGURE 1: The three major purposes of home economics education at the secondary level and nature of their relationships.

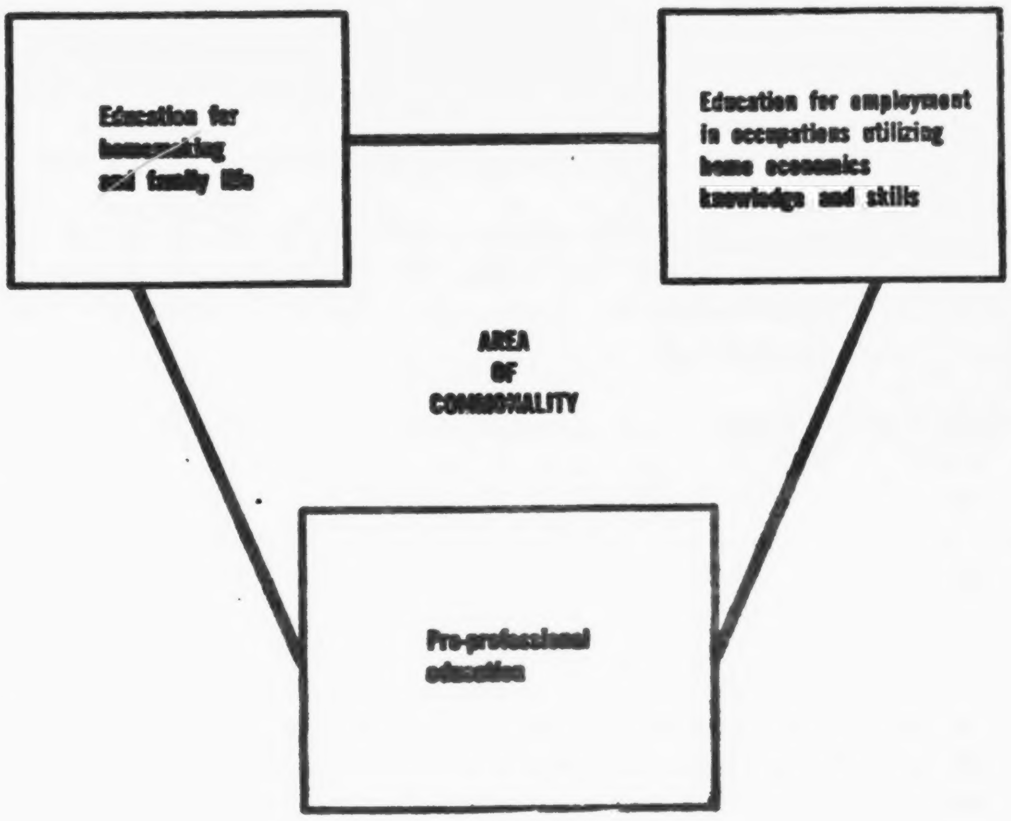
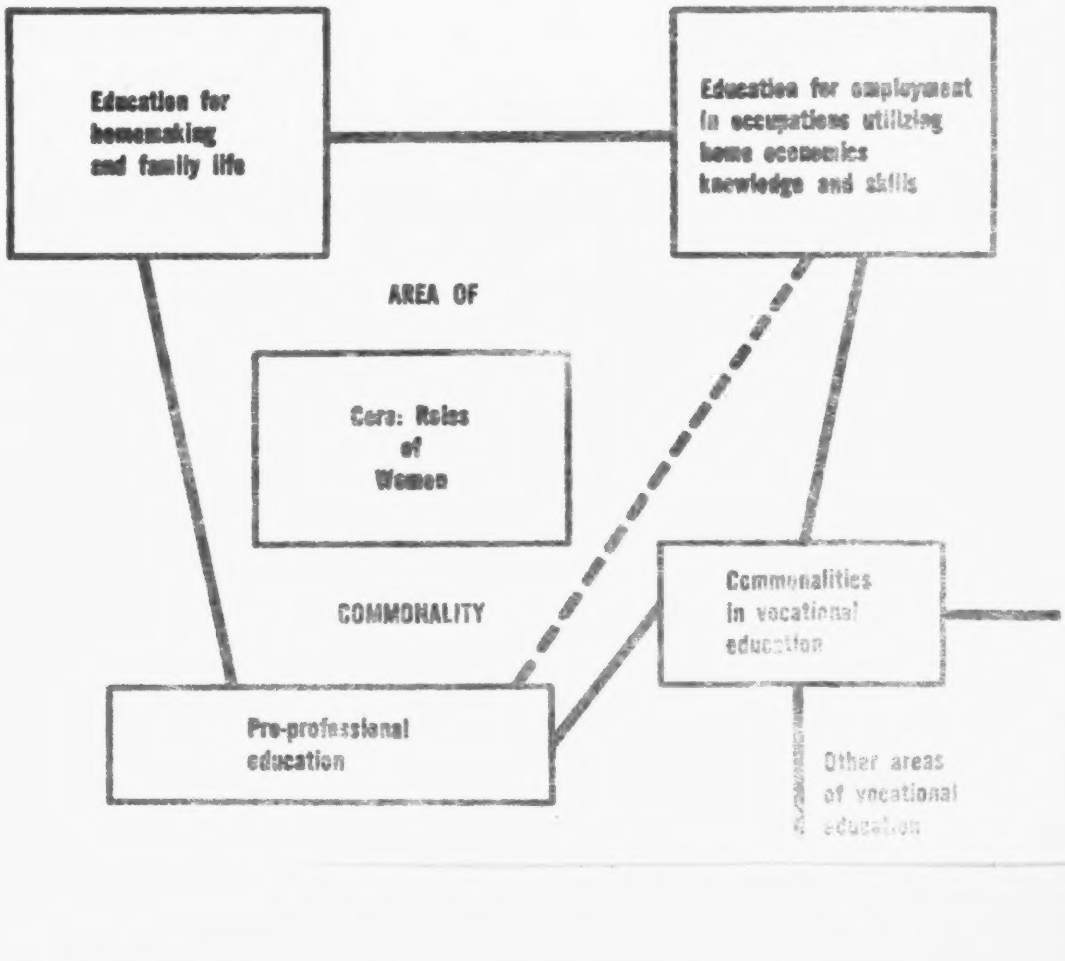

Education for homemaking and family life
Education for employment in occupations utilizing home economics knowledge and skills
AREA OF COMMONALITY
Pre-professional education

FIGURE 2: Organization of the home economics curriculum for the present and foreseeable future, as envisioned by the author.


Education for homemaking and family life
Education for employment in occupations utilizing home economics knowledge and skills
AREA OF
Core: Roles of Women
COMMONALITY
Commonalities in vocational education
Pre-professional education
Other areas of vocational education

Scope and Sequence Chart: Home Economics Program at Secondary Level, Based on Proposed Curriculum Schema

Grade	Areas of study						
7th	Understanding Personal Development Physical Emotional Social	Personal Attractiveness Personal hygiene Grooming Manners	Developing Traits for Employability, Friendships	Nutrition and Food Selection	Helping Keep Surroundings Attractive, Safe, Sanitary	Managing Personal Resources Time, energy, money, ability	Helping Care for Children Guiding children's play
8th	Understanding Personal Development Concept of "femininity" Feminine responsibilities	Understanding Others Friends of same sex Boys Parents and other adults Older persons	Occupations Related to Home Economics Requiring varying levels of preparation	Selecting and Caring for Personal Clothing	Use of Personal Leisure (Analysis of TV programs, movies)	Communication in Social Situations As hostess, guest, entertaining at home	
9th	Understanding self Present roles Basic human needs (self)	Understanding Others--Family and Friends Basic needs (others) Communication, verbal and nonverbal	Personal Standards of Conduct Value bases	Becoming an Attractive Woman Grooming (new aspects) Clothing selection (art aspects)	Consumer Buying of Clothing Wardrobe planning Quality features (not covered, grade 8) Ethical shopping practices	Personal Nutrition Problems in nutrition Preparing a quick, nutritious meal	Use of Personal Leisure Concepts of leisure Values related to use of leisure
10th	Looking Forward to Marriage and/or a Job or Career Orientation to world of work	Becoming a Mature Woman Concept of "maturity" Evaluation of own maturity Sensitivity to others' needs Improving communication skills	Understanding and Caring for Children (Self-understanding through understanding children	Planning and Preparing Simple Meals Principles of cookery (basics only)	(may be omitted) Personal Clothing Minimum essentials of construction		

Grade		Areas of study		
11th 12th	Education for Employment Students. Those for whom high school is terminal and those preparing for further vocational education in vocational-technical school or other specialized training program	Preparation for Employment (Commonalities in Vocational Education)	Cooperative work experience-study program to prepare for employment in occupations requiring home economics knowledges and skills and/or Classroom program to develop knowledges and skills for employment in one or more areas or a combination of these	Group and individual conferences on problems related to job and to management of personal resources. Special units on: 1. Living away from home Living arrangements Finding a place to live Relationships at work and away from the job 2. Continued development for employability
11th or 12th	Pre-professional Education Students. College-bound, particularly those interested in home economics professions	Professions Related to Home Economics Meaning of Profession Professional person Professional commitment	Independent studies in depth--problem related to some phase of home economics	

Grade		Areas of study						
11th	Education for Homemaking and Family Life Students. 11th and 12th grade students looking toward marriage. Basic course--for boys and girls (team teaching by man and woman teachers)	Meaning of Home and Family Family Roles	Family as a Social Institution Relationship to other social institutions Cultural influences on family life	Responsibilities of the Family To its members To society	Developmental Stages of Family Life	Beginning a New Family Husband-wife relationship	Managing a Home	Becoming a Parent
12th	Students. 12th graders who have had basic course. May be elected after after basic course	Family Financial Management	Housing the Family and Furnishing the Home	Providing for Family Food Needs	Providing for Family Clothing Needs	Meeting Needs of Sick and Aging in the Family	Continuing Education in Family Life	

Boys in the Program. We are, of course, assuming that somewhere in the school program young men would be educated for their roles as men - for understanding themselves and others, including girls and women. And it would certainly seem desirable for boys to prepare for their role as homemaker by meeting with girls for the course in family living - at least part of the time.

Perhaps in the future a team of teachers (a woman specially prepared in the areas of family relationships, child development and management, and a man who has specialized in family relationships, and child development or sociology) will teach the family living class for girls and boys.

Within ten years, new ways of reaching all students with education for family living should be found. Perhaps the answer will be in summer school classes, concentrated family-life workshops for high school students, once-a-week seminars, and weekend institutes.

Cooperation with Other Areas. At present, many are concerned with ways to achieve cooperation among the various areas of vocational education. States are reorganizing departments of vocational education in order to make increased understanding and cooperative activities possible; colleges are working toward the same end; local schools are developing cooperative programs. Within ten years, students should be reaping the benefits of such cooperation. As one aspect of such cooperation, commonalities in vocational education as a whole should be identified, and programs should be planned to take these commonalities into account.[3]

Redefinition, Not Refinement. Figure 2 shows what I envision as a desirable organization of the home economics curriculum for the present and foreseeable future. It includes some additions to the diagram presented previously. Implications for program development would appear to be obvious.

The opportunities for development and expansion of the field of home economics education have never been greater. If we can boldly and imaginatively attack the problems in the field, if we meet the new challenges - particularly those related to our new vocational purposes - we can develop powerful forces for helping girls develop as mature women, for improving home and family life, for helping some students achieve employability, for helping some get ready for professional education in home economics or related fields, and for helping young men assume their roles in building strong, secure families.

What is required is not a refinement of what we have been doing in the past. What is needed is willingness to redefine the field.

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[3] Van Camp, Donna M., "Commonalities in Vocational Education," Illinois Teacher of Home Economics, Vol. VIII, No. 1, pp. 23-32.

BAYONNE CURRICULUM RESEARCH PROJECT

Seminar, Bayonne High School Library

Speech of Dr. Frank M. Cordasco - Friday, December 17, 1965

I was indeed flattered with the invitation that was extended to me to appear with my brethren in vocational education as a consultant at this timely and historic conference. My primary interest, as perhaps is known, lies with the socially disadvantaged in our society. Of course, Hudson County (N.J.) has many of the socially disadvantaged and of course the problems of the socially disadvantaged impinge on the mandates and charges of my brethren in vocational education. Hudson County is extraordinary not only in its proximity to New York City (it lies across the Hudson River from it), and as part of a megalopolis which has taken protean form, but more so in that it presents in itself a microcosm of social change with all of the attendant problems. You name the problem, and we have it in Hudson County.

As a matter of fact, Superintendent of Schools Clifford Rall of Bayonne joins a group of distinguished educators who have, for some time, been not only aware of the educational problems, but have been confronting them very courageously. Jersey City is a target area in the war on poverty launched by the Office of Economic Opportunity. Its schools under the dynamic leadership of Dr. Robert Coyle have been responding courageously, and with imaginative and professional skill to the problems of a rapidly changing central city. School Superintendent Thomas McFeely of Hoboken has pragmatically and successfully responded to the needs of his school district in which upwards of 30% of the children are Spanish speaking, and which is an epitome of the vast migration from Puerto Rico to the American mainland. Equally courageous and imaginative stances are evidenced in Union City, West New York, and here in Bayonne as a result of the implementation of the federal grant which subsidized this conference.

I propose looking at the federal legislation which touches our prerogatives in education, controversially and provocatively (with the inevitable alienation of some, and the endearing of others), I propose looking at the challenges to vocational education; and I propose in the brief time alloted to me, to say some things about the opportunities that this Bayonne Curriculum Research Project affords us in New Jersey, and significantly in Bayonne and Hudson County.

The major federal statutes which have touched education very vitally have come with a steady chronological rapidity. If we look back but a few years, these have included the Manpower Development and Training Act of 1962, the Vocational Education Act of 1963, the Economic Opportunity Act of 1964, the Elementary and Secondary Education Act of 1965, and the Higher Education Act of 1965. All of these have touched (or promise to touch) the very entrails of education. The Adult Education programs spawned under Title II (B) of the Economic Opportunity Act have effectively demonstrated the need for a commitment beyond even the organizational pattern that the school in America currently shows. The mandate of education has been further redefined in the structuring of Neighborhood Youth Corps projects, in Job Corps installations, and in the massive commitments to Headstart for pre-school children, all hatched in the social cornucopia that is the Economic Opportunity Act, administered in New Jersey under the dynamic leadership of Director John C. Bullitt, and its ubiquitous educational consultant, Dr. Charles R. Kelley.

When you look at these gigantic efforts, one thing becomes eminently clear, and this has been perceptively noted by other speakers. Not only are these federal programs an attestation of basic need, they are even more critically an attestation of the forfeiture of the prerogatives of the American educational establishment (I do not use the word in a pejorative sense). Some of our critics have said: "You have done a bad job in the schools; you have not done a job at all, and if you continue to do a poor job or if you refuse to do the job, we will build a system in, around and under you which will do the job." There is a manifest peril here for American education; and there are forces abroad in the land which would not only change education, but even take it away from those who have earned its supervision and management. The American school has been singularly successful. It has, in a free and open society, afforded its children the means not only of basic, rudimentary instruction but also the social mobility that has always characterized American society. It is not, as our critics would affirm, that the school has not adjusted itself to the social problems of our time (it has always done this; John Dewey spoke for American education a long time ago from the slums of Chicago) but rather that the school has attempted to meet the overwhelming problems of a technologically changing society; the poignant needs of the poor in central city slums; and it has alone shared the awesome responsibility for the tragic results of what poverty, segregation, and bitter alienation do to children. That the school cannot stand alone is a truism: what the school has desperately needed is the interest and commitments of all other agencies in our society which would allow true success in any program of change and reform. This interest and commitment it has most niggardly received.

If the American educational establishment is cut out of the programs which are being spawned by federal money, these programs will most certainly not succeed. It is indeed sad to note that here in New Jersey the Federal Electric Corporation has received 12 million dollars to mount a Job Corps program to meet the needs of out-of-school youth, and that professional educators have been relegated to the invidious status of consultants. I say this is bad. And I say, too, with great emphasis, that American education is more than adequate to respond to the solution of the problems which remain basically educational in nature. The Elementary and Secondary Education Act of 1965 very clearly reserves the mandate of educational innovation within the existing educational structure, and in this sense the Act will prove successful. The various titles of the Act supply the financial sinews (so long denied) which will allow the professional educator to translate all of his great skills into action; and equally, too, the Vocational Education Act of 1963 provides this financial strength. The school district superintendent does not have to be sociologist to know the needs of his charges. He is acutely aware of the fact that one child in every four in the United States lives in a context of bitter deprivation. He is sensitive to the aspirations of his children who come from lower class homes where educational aspirations largely remain the only hope of social ascalation. He remains constantly aware of the alienation that segregation has brought the Negro and Puerto Rican children; but no matter how urgent his plea for needed changes; no matter how sensitive his response, his success can be no greater than the total community's commitment to the eradication of social scars, to the destruction of slums, and to the moral imperatives of brotherhood.

I do not have to remind this distinguished assemblage that the school superintendent and his staff have no control over the public purse strings. If educational opportunity has declined, if shcool districts have not responded to the needs of children, the fault must lie with the community and with the lack of support that the community has chosen to give its school leaders. Nostalgically, one remembers the great opportunities for vocational and occupational education that existed in Bayonne. If the opportunities declined, the declination must be attributed to the failure of the community to support with its money and fervent commitment the community's schools which afforded youth these opportunities. Certainly, it does not lie with the school leaders who, no doubt, had a multiplicity of innovative programs for which they sought support.

Let us look for a moment at Hudson County which for decades has served as the hub of a vast megalopolis which admitted the poor and displaced of Europe. The very ethnic diversity which is in this room is a singular attestation of the great success that the schools of Hudson County have achieved in the acculturation of the children of millions of European immigrants who poured into the county's cities. There is significantly in Hudson County, to the best of my knowledge, no active chapter of the Daughters of the American Revolution (I am certain the county would be hospitable in any event); neither is there in the county a dominant 17th or 18th century population stock; and this would be the pattern of most of urban America. Now, if the schools of this county and urban America were so singularly successful in the acculturation of millions of children of diverse origins (who spoke with a multiplicity of tongues and who brought with them a myriad of cultural heritages), why should the schools be any less successful in the confrontation of today's problems?

It is true that the problems are staggering. It is true that there has been vast technological change; that our society is becoming closed; that social mobility is much less fluid; that there have been vast population upheavals and in-migrations - but it would be wrong to suggest that the poor, who are largely in-migrants displaced because of the technological change, present in themselves any greater problems than were presented by the poor in another era. The Negroes in our slums are there because they have been economically displaced by the automation of Southern agriculture; the Puerto Ricans are huddled with the in-migrant poor in the ghetto because they have chosen to seek a better life on the American mainland. I repeat: they are not unlike the poor of another era, and in Hudson County they occupy the slum tenements which have been abandoned by the children of the European poor ushered into the middle class and suburbia by the ministrations of the American school and the opportunities of a free America. Perhaps, no segment of American education enjoys greater challenge than vocational education, at this critical juncture, since the poor and the socially disjointed are most effectively related to society in terms of the fundamental skills that the American school can bring them. Not only is this realization a challenge to vocational education, it is an implicit call for dynamic action and leadership.

As a sociologist who reads the journals that my brethren in vocational education publish, and as one who sees the critical need that vocational education must face, allow me a few stringent observations. The first order of business for my brethren in vocational education, as I see it, is that the worst-kept secret in the world be publically acknowledged and resolved. I am appalled by the civil war that is being waged between people in the Industrial Arts and the Vocational Arts. I am amused by the euphemisms that the protagonists in this war have coined: occupational, vocational, practical, world-of-work, paraprofessional, transfer of skills, etc. I say to all of you: Put your house in order! and put it in order to face the serious challenge which has emerged. The challenge for Industrial Arts, Vocational Arts, Practical Arts (call it what you will) is that American society has so drastically changed that the needs of its youth can only be served with immediately mounted, dynamically broad programs which afford educational orientation to the new world of work, and which in themselves meet the needs of some 80% of our youth. Only vocational education can meet these needs. If the situation is particularly desperate for the poor in our society, it is equally desperate for the children from the blue-collar range of the lower class, and equally for the children of the middle class (despite the aspiration of their parents), for all children must be effectively related to the diverse skills that our behemoth technocracy demands.

Vocational education, in my estimation, will become the broad base of educational change, and it alone can afford the meaningful catalyst for this change; but vocational education in this sense must be understood to mean the preparation of our youngsters for all measures of true identity in American society. To me it means not only the technical skills and basic proficiencies, it also must mean all of those skills which have been dramatized in Home Economics Education. It must mean expanding opportunity for women; it must mean family life education; it must mean cultivation in our young of a new sense of the dignity of work and achievement. It must mean a tremendous awareness of the needs of the community and of youth. It suggests to me a better guidance and counseling for our youngsters, and stipulates a dynamic relationship of what we do in the school with what we do in the community. Fundamentally, it must recognize that 80% of our youth will not go on to college, as colleges are presently structured, and I sincerely trust that, in this connection, those of us in higher education will energetically reform our own temple, and activate a community college concept which is basically attuned to the broad occupational orientation which will have dramatically begun under the aegis of the public schools. It must truly mean all of this, if we dare hope at all.

Do not for a minute think that I am talking of social or educational utopias. It is a sociological truism that change takes place slowly, relentlessly with reference to needs; no institution can survive social unrelatedness, and the American school is no exception. Vast educational change is taking place in this country, and it is following the patterns that I have sketched. I need only to call your attention to the programs in Flint, Michigan, or to those in New Haven, Connecticut, which clearly point up the adequacy of American educational leadership when it is joined with total community commitment. Basic to the innovative program is the meaningful occupational orientation that vocational education is affording.

This is really the opportunity that the Bayonne Curriculum Conference provides. Federal money is only the base from which innovation will go forth, and I believe that the innovation will be only as successful as there is a concomitant community endeavor. In this sense, Bayonne is where Flint and New Haven were not many years ago. Bayonne may well afford example not only to Hudson County, but to the nation as well.

Allow me to close on several peripheral, but important concerns. When Secretary John W. Gardner of the United States Department of Health, Education and Welfare, recently declared that it is leadership which is needed for the confrontation and solution of our problems, I most heartily concurred; but leadership is of no value (and Secretary Gardner would be the first to agree) unless there is identity of leadership with the effort of a team. I have great faith in the American teacher, because the American teacher is resourceful and can respond to challenge. Administrative leadership coupled with the resourcefulness of teachers promise a true and genuine success.

Vocational education has never been the stepchild of American education. Academicians who so believed made a terrible and gratuitous error. Today, leadership in vocational education, like the leadership of a modern Moses, is the only force which can lead American education to greatness both of purpose and design. If anything, federal legislation in education affirms this because it seeks those orientations for American youth which only vocational education can provide. Thank you.

BAYONNE CURRICULUM RESEARCH PROJECT

Seminar, Bayonne High School Library

Speech of Dr. Chris H. Groneman - Friday, December 17, 1965

CHALLENGES FOR PRACTICAL ARTS

It is a real pleasure to be a member of such a group of distinguished educators acting with this well-chosen and interested gathering of representatives from your State Department of Education, personnel from the Trenton State College, and professional educators and lay members of this industrial community.

I commend Dr. Rutherford Lockette, in particular, for the foresight and ingenuity manifested in the initiation of this most interesting study. The outcome can well have a profound influence on similar communities throughout this nation. Much interest has already been focused on this project, and I feel certain that additional attention will be cnetered on this capable leadership as the planning is implemented by action.

The many federally-funded programs in operation today are of such a nature that thirty million people are eligible for educational assistance. None of these programs provides a magic formula for guaranteed success, but a combination certainly should upgrade the general level of understanding, achievement, and progress. This is a unique package which you have here, and is specifically a clear mandate to do something about education and occupational training.

My phase of this initial presentation concerns itself with the several functional areas of practical arts including industrial arts and general homemaking as they relate to the theme of the research. I shall discuss such significant component areas as the socio-economic conditions, objectives and specific aims of practical arts, approaches to chieving content for practical and industrial arts, and types of students who should benefit most from participation and acquaintance with the many facets of practical arts.

Socio-Economic

One of the major objectives of education is that youth develop arts and practices of effective citizenship. This means that youth must develop competencies (practical and industrial arts) which will enable them to understand contemporary life and occupy resourceful roles.

If this is to be realized even in part, it seems essential to develop the conditions wherein youth, as well as adults, will increasingly become aware of what skills and knowledge are needed for the practice of effective citizenship tasks.

The major vunction of all education is:

1) To produce citizens who can think;

2) Who have something to think about; and

3) Who have been sufficiently introduced to major fields of human experience to enable them to act with intelligence and moral discipline.

These are indispensable to a sane and sound program.

The songs of protest are being sung off key by those who are chronic drifters in today's society. The ones who are busy doing things, trying to contribute to modern society are too busy to learn the words of protest, and are too busy merely to kill time.

It would be far more practical to have given these individuals an introduction to basic skills whereby they could do some one thing well. Dewey's educational philosophy was a solid one; one that had appreciation of reality in its motivation.

Practical arts can be the firm foundation where the student learns specific skills or non-skills; where he or she can stand while he expands his horizon of living; where he has a pad to launch into our challenging society. He knows he has something to offer, has accomplished a definite thing, and therefore can speak and act with confidence and enthusiasm.

Any program to be successful must have the following prevailing attitudes:

1) A willingness by all concerned to do something about it

2) A vigorous support by administrative officials

3) Flexibility of purpose, thought, and action by teachers

4) Specialists who must take active leadership in their areas

5) Advisory committees created to include the lay public to function and to be heard

6) Excellent rapport between professional educational personnel and parents

7) Special classes provided for the inevitable drop-outs who are often considered to be "push-outs," and

8) Dispelling the concept that everyone must have a college degree. The occupational dictionary contains over 26,000 job titles, with 20,000 of these requiring no college degree.

This type of community action program of providing social acceptability and marketable skills will then lead to adult literacy for everyone.

There has been a tremendous emphasis placed upon education during the past decade, much of which has resulted in educational changes due to the space exploration of the spectacular, and disturbing Russian Sputnik. This single event gave rise to educational crash programs which mushroomed virtually overnight. Never in our history has this country changed so drastically or educationally so rapidly; not even when Thomas Edison perfected the incandescent lamp, or when the Wright brothers flew the first airplane.

We in the practical arts were virtually stunned. We wondered what might be the new look for practical and especially industrial arts, and many questions arose as to the direction in which we should go. You will recall that our literature of seven or eight years ago indicated that several leaders were ready to press the panic button. The big problem was whether our field would include science and mathematics on an increased scale. This led to the serious question of what the future of our field would be.

Many in the field, with ten or more years of teaching experience, will recall that administrators transformed a great number of practical and industrial arts laboratories and shops into so-called science centers. That was fine, and very forward-thinking, except for one little flaw in the reasoning behind these changes. Someone lost sight of the fact that not all students were going to be super scientists or mathematicians of genius ability. Many would have to remain behind and not go into the wild blue yonder!

At the present time, after several years of educational turmoil, it appears that the pendulum is swinging back and resuming a more normal arc. Administrators have concluded that science and mathematics on an intense schedule are not the complete answer for every educational need, and that what is best for the gifted or exceptional student is not necessarily the best for the average one.

Practical and industrial arts is big business in the United States educational picture. In view of world-wide educational needs, it could well expand into a challenging program of international influence and scope. Statistics show that 75 percent of all secondary schools (grades 7 through 12) in the United States have industrial arts programs. Furthermore, 28 percent of these secondary students take industrial arts, as compared with 25 percent in 1950. This increase in percentage is in spite of the Sputnik scare and the subsequent space science expansion. Today there are approximately four million students in secondary schools who take practical and industrial arts. This is twice the number in 1950.

General Objectives

Let us analyze for a brief moment what has made the practical and industrial arts so popular and meaningful. Many persons feel that our national objectives are responsible. I refer to the suggested objectives adopted on nationwide scale, and contained in the bulletin entitled A Guide to Improving Instruction. This program is successful because there has been an evolutionary process rather than one involving a revolution in educational procedures.

Industrial arts has been defined as a form of non-vocational education which has for its purpose the giving of information about, and experience in, the use of tools, materials, and processes, incident generally to the manufacturing industry and to the home. This definition has been more recently interpreted to be essentially a study of fundamental industrial materials, products, processes, equipment, and an understanding of our involvement in this great industrial technological society. There is a similar interpretation for general homemaking.

Those in the industrial arts field subscribe, generally, to the suggested objectives contained in the bulletin A Guide to Improving Instruction in Industrial Arts:

1) To develop in each student an interest in industry and to introduce him to the methods and problems of industry.

2) To develop in each student an application of good workmanship and high standards of quality so he will have a better insight into industrial consumer product values.

3) To develop in each student elements of self-realization and initiative. These to provide him with some confidence of self-reliance and cause him to be a bit more resourceful.

4) To develop in each student a cooperative attitude as he progresses, not only as an individual, but with group and team assistance.

5) To develop in each student a concept of health and safety so that he will have a higher respect for himself, his associates, and the tools and equipment with which he works.

6) To develop in each student an interest in achievement to give him a factor of self-pride and to aid him in the development of leisure time activities.

7) To develop in each student an orderly performance in doing a task. We hope this becomes a matter of his learning what is meant by efficiency.

8) To develop in each student a knowledge of drawing and design so he will have a new language by which to express his ideas.

9) To develop in each student some basic industrial skills and knowledge about the use of tools, equipment, material, and a few problems of fabrication, construction, and repair.

10) To develop in each student some occupational guidance through concrete experience within a family of industries.

The last three objectives involving a new language in expressing himself, basic industrial skills, and occupational guidance are unique to the practical and industrial arts and to our counterpart in vocational industrial education. There is no other course in either the junior or senior high school which can properly claim these objectives. These, seemingly, are the ones which have made practical and industrial arts so popular with students, administrators, parents of students, and patrons of the community. All of the other objectives are common with other instructional areas.

In referring to general educational objectives for the junior high school, we should consider the needs of youth in the emerging dynamic industrial society. It is becoming much more technical in nature, and as a result we have increasing social and economic problems. The choice of a career is sometimes a baffling, and even terrifying decision for youth, and they need all the assistance we are able to offer. The broader their horizon in the "teens" the more secure they feel as they explore the possibilities of an interesting future. The practical and industrial arts for the senior high school in both large and small communities has become a familiar and productive educational asset.

Specific Aims for Industrial Arts

We have considered briefly the general objectives of our field. Let us now give specific consideration of the aims for high school industrial arts.

They are four:

(1) Industrial arts helps youth enter the labor force directly from high school. The American school system was founded on the assumption that provisions would be included for occupational experiences so that youth might have an understanding of them, thus giving flexibility in choice of eventual occupation. Due to this proviso of eventual career selection, I do not see how we can overlook some marketable skills offered through practical and industrial arts. Skill must be developed, particularly in the formative age. Some teachers in our field refuse to use this word, "skill." To me there is no apparent reason for this because teachers of reading, mathematics, and science constantly refer to skills. It must be stressed to avoid inaccurate results.

(2) Considering the second aim, we believe that practical and industrial arts is an excellent preparation for further education and vocational education, technical education, and for either college or university. Generally the practical and industrial arts program in high school is committed to the preparation of college or post-high school bound youth. This poses the need for reorienting those who are seeking to enter the new electronically-controlled technical fields. But how many teachers provide a background in electronics?

(3) We find in the third aim that practical and industrial arts, when properly administered, should assist to lessen the critical drop-out rate of potentially useful citizens. Our field has the potential for revitalizing an otherwise unrewarding educational experience. The world seems to come to life when students engage in real projects within a life-related situation. More respond to activities in which they can see some real values for themselves. Certainly the drop-out rate might be lessened through practical and industrial arts experiences.

(4) The fourth aim stresses the fact that practical and industrial arts is adaptable to the accelerated, as well as to the slow-learning student. Fast as well as slow learners find a definite happiness and satisfaction in our field because of our individual-difference type instruction. Flexibility is offered through the variety of activities; furthermore I believe that practical arts tends to remove peculiar stigmas and complexes.

Approaches for Educational Content

If we expect to achieve any of these objectives and aims, and make progress in our field, it is necessary to give thought to some methods or approaches in selecting content to teach industrial arts. I will mention four which have been most frequently used, discussed, or written about in our periodicals. Any of them can be effective, depending upon how "sold" the individual teacher is. They are:

1) Instructional analysis
2) Interpretation of technology
3) Avocational activities, and
4) Problem solving and creativity with industrial tools and materials through scientific application

The instructional analysis method should be developed to help select content which includes such traditional areas as drafting, electricity and electronics, graphic arts, handcrafts, metalworking, power mechanics, woodworking, and other materials-type classifications. Through this analysis procedure the learners gain experience in planning, production, testing, servicing, and evaluating consumer and industrial products and goods.

Interpreting technology for content may be accomplished through use of such categories as manufacturing, transportation, management, construction, communications, power, service, and research and development. This appears to be an attempt to regroup the instructional analysis method. There are some who feel that this is perhaps too great a departure from the more traditional instructional analysis method. Generally these categories are even broader than those prescribed by professional engineers.

Analyzing avocational activities for content is a technique found in some public school systems. The theory behind this particular technique is that students can be provided experiences in planning the development, maintenance, and future-looking adaptability in furniture and appliances. Those who support this method state that since there will be a shorter work week for the labor force, we must provide guidance in developing leisure time activities. Explorations of an avocational nature also give release for working people from their daily emotional pressures. No one can really question the therapeutic values gained from meaningful work habits. The do-it-yourself movement has great implications for this method of selection of content.

Problem solving and creativity with industrial tools and materials through scientific experimentation or application is a method often mentioned and discussed. Advantages of this approach are many. A student is provided with a means for growth and development as an individual because of his opportunity to participate as a member of a group or team. Here he has the chance to do research and planning through the use of appropriate materials, tools, and machines. This enables a more accelerated student to apply technical and scientific principles through completion of problems or projects. Here he gets a real satisfaction by being a vital element of some exciting problem situation.

Types of Students

I would like to mention briefly the types of students in industrial arts as given by a national survey. The United States Office of Education states that less than one-half of one percent of the students in the upper 25 percent ability grouping, in grades seven through twelve, take industrial arts. This would then mean that in general we are talking about students with average intelligence who are in practical and industrial arts classes.

The American Council of Education states that there are over four million skilled technical job openings existing today. Furthermore, 200,000 technicians should be graduating annually to supply the need, but unfortunately and shortsightedly, we are producing only approximately 50,000 of these desirable trained people. These folk are capable of earning a five-figure income in a decade, according to today's living standard. Certainly we in industrial arts can provide some basic industrial foundations to aid in training or starting students to become familiar with this vital area of opportunity.

In closing I would like to give you two observations which were made this past summer at an annual convention of the American Society for Engineering Education. Dr. Eric Walker, President of Pennsylvania State University, an eminent educator and engineer, made these two pertinent and startling statements: (1) One-half of what we know today technically will be obsolete in ten years from today, and (2) one-half of what we need to know technically in ten years from now has not been developed or has not come to light yet. This is a rather frightening situation.

Just last week in Miami, Florida, at the annual convention of the American Vocational Association, Dr. James Kingsbury, Chief of the Engineering Branch of the George C. Marshall Space Flight Center in Huntsville, Alabama, stated that the American industry and public would receive back two dollars for every dollar spent in the space program. This would be through improved industrial products and commodities.

Already we are receiving the benefits through many new types of materials, he stated. This means a constant inservice improvement and upgrading of our knowledges of this industrially complex technology.

Are we keeping abreast with the demands of the future? Are we in focus so that we can keep pace with the future in practical arts? I feel that this project can develop into a very stimulating and forceful one, and become one of historic note.